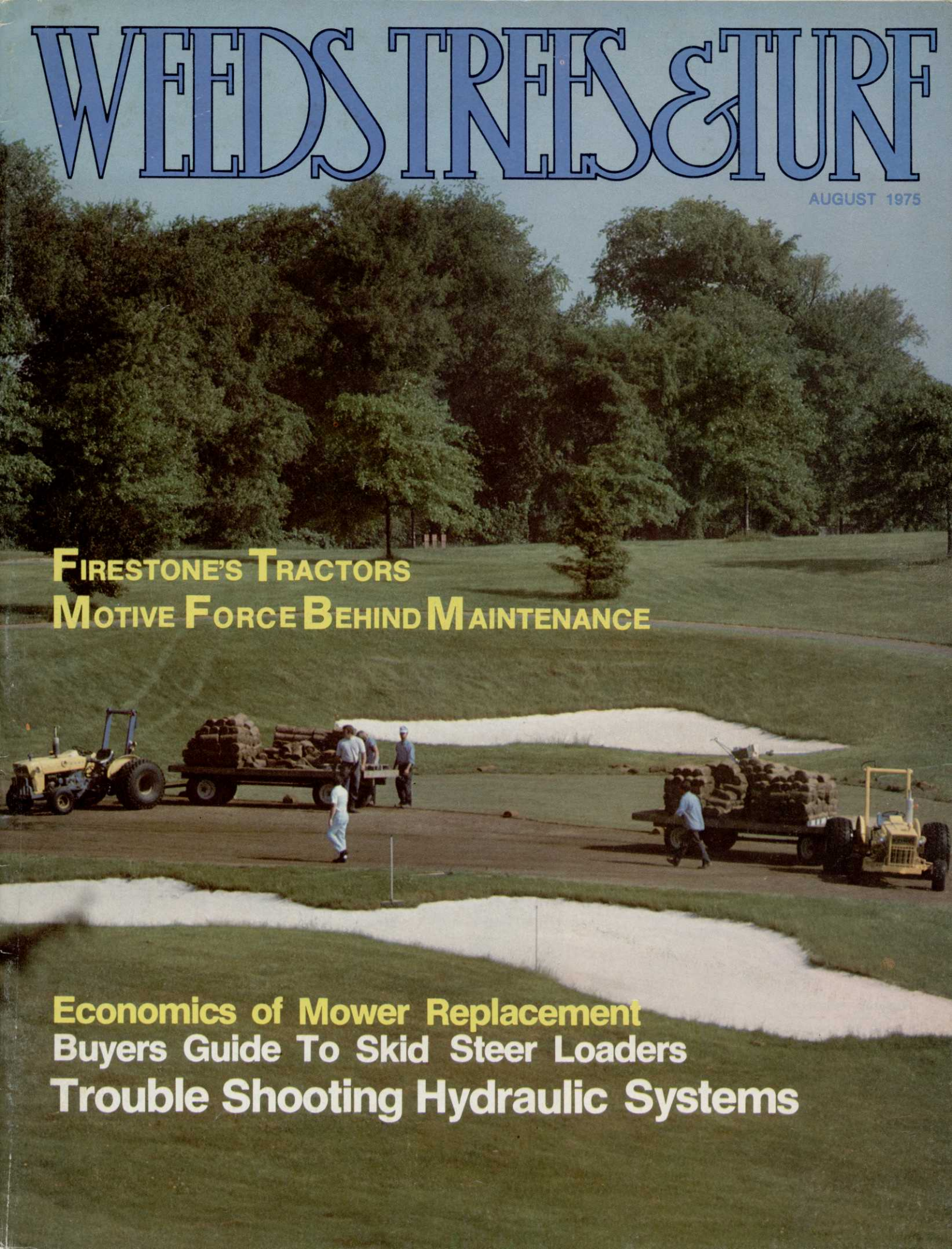
WEEDS TREES & TURF

AUGUST 1975



FIRESTONE'S TRACTORS MOTIVE FORCE BEHIND MAINTENANCE

Economics of Mower Replacement

Buyers Guide To Skid Steer Loaders

Trouble Shooting Hydraulic Systems

FREE

Vacuum Pickup Attachment when you buy a new Hesston Front Runner® GMT!

Now, when you need it most to clean up leaves and clippings, we'll give you FREE a self-contained Vacuum Pickup Attachment worth over $500.00 when you buy any standard Front Runner Grounds Maintenance Tractor with mower.

It's the perfect time of year for a new powerful vacuum leaf pickup. And best of all, it's free when you buy the versatile Front Runner GMT.

What an unbeatable deal! A self-contained vacuum that deposits leaves and clippings into its own 20-bu. collection box as you mow. No trailer needed. And it's free . . . just when you need it most for your fall cleanup chores. The pivot dump and removable endgate make dumping easy. An optional 15-ft. snorkel cleans hard-to-reach places.

Yes, the FREE Vacuum Attachment makes Front Runner GMT the best deal going this fall. And up-front attachments give it year 'round versatility to mow with 48", 60" or giant 80" mowers, clear snow with the Snow Thrower, 2-Stage Snow Blower or V-Plow, handle dirt or snow with the Angle Blade. All are hydraulically controlled.

Front-wheel hydrostatic drive. One-lever speed control. Instant forward/reverse. Articulated steering for great maneuverability! Front Runner GMT is everything you expect from a 16 or 19.8 hp mower . . . and much more! And with the FREE Vacuum Offer, it's a deal you just can't beat!

Articulated steering lets you cut close around trees and next to buildings with ease.

Snow Thrower clears a 48" path directing snow to left or right. Cab is optional.

Front Runner GMT and FREE Vacuum Pickup — a powerful deal you shouldn't miss!

See your nearest participating Hesston Lawn Equipment dealer for details.

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1504 Sadlier Circle S. Dr., Indianapolis, Indiana 46239 Dept. B
Phone: 317-352-0193
I want to know more about my FREE Vacuum Pickup Attachment and the all-season Front Runner GMT. Please rush the name of my Front Runner dealer.

Name _____

Company _____

Address _____ Phone _____

Town _____ State _____ Zip _____

Ask about the new Front Runner Turf Truck and Three Wheeler.

HESSTON LAWN EQUIPMENT

Circle 110 on free information card

It's summer.

For effective control of dollar spot and large brown patch, use TERSAN® 1991.

TURF FUNGICIDE

Sure, you want your course to look its best.

To keep it green, healthy and disease-free, spray TERSAN 1991 on tees, fairways and greens. Sprayed only every 10 to 14 days, it causes less inconvenience for players and reduces labor costs.

Used correctly, TERSAN 1991 stops dollar spot and large brown patch before they can damage your turf.

Should pythium be a problem in established turf or at overseeding, apply TERSAN SP.

With the Du Pont TERSAN 1-2-3 Program, you'll be on top of turf diseases all season long.

The TERSAN 1-2-3 Program gives you effective, economical and complete disease control. For details, contact your golf course supplier today.

TERSAN 1•2•3
DISEASE CONTROL PROGRAM

DUPONT
REG. U.S. PAT. OFF.

With any chemical, follow labeling instructions and warnings carefully.

Circle 108 on free information card

MY THREE MEN FERTILIZED 700 TREES IN A DAY AND A HALF...

"My three men fertilized 700 trees in a day and a half with Jobe's Tree Food Spikes. I couldn't believe it . . . so I went around and checked behind them. Sure enough, they'd fertilized all 700 trees. Beautiful," says Richard Boehm, Superintendent, Military Golf Course, Wright-Patterson Air Force Base, Dayton, Ohio.

"I want to keep my trees growing strong and beautiful. That's why I used Jobe's Tree Food Spikes. I just couldn't believe that Jobes could save so much time but we did the entire course in a day and a half," concludes Dick Boehm.

"And you can see the difference they make. Similar trees were put in on the other side of the road. Ours are greener." confirms Boehm.

Jobe's Spikes can save just as much time for you. Each spike is a premeasured amount of the right combination of plant foods for trees and shrubs. This eliminates the chance for mistakes, while saving time and money. And they've proven effective in University tests.

Order direct or from your jobber-distributor. $30 per case (105 spikes) for 5 cases; $25 per case for 15 cases. Shipped pre-paid.

Jobe's

MAKES TREE FEEDING EASIER

TREE FOOD SPIKES

INTERNATIONAL SPIKE, INC.,
462 EAST HIGH STREET
LEXINGTON, KENTUCKY 40508

WEEDS TREES & TURF®
August 1975, Vol. 14, No. 8

12 **Repair or Replace?** — When dealing with the complex world of machines, it's best to know when you've spent enough money repairing that old machine and when it's time to trade it in and purchase a new one. J. R. Watson, vice-president, Toro Co., presents guidelines for determining when the time has come to replace equipment.

14 **Europeans Examine U.S. Implant System** — The "lime induced chlorosis" problems experienced by many European fruit growers are being solved by the introduction of a popular U.S. brand of encapsulated iron.

16 **Hydraulic Maintenance Is Back** — Hydraulic systems have become so refined in the past few years that proper and regular maintenance is a must. J. L. Love, service supervisor, International Harvester, outlines a regular maintenance schedule to insure performance and longevity from a hydraulic system.

17 **The Little, Big Machines** — With the popularity of skid steer loaders increasing at a tremendous rate, a dozen or more manufacturers have appeared almost overnight. Even though they may all appear to be the same, there are important differences to consider when selecting the best skid steer loader for your particular needs.

26 **Keeping Firestone In Championship Condition** — Probably the single most important piece of maintenance equipment a golf course can own is a tractor. Peter Miller, superintendent at Firestone, explains just how valuable tractors can be in keeping a course in top-notch condition.

35 **Guest Editorial** — John Kinkead, National Mower Company, presents his opinions, as an equipment manufacturer and consumer, on proposed government regulations requiring additional mower safety devices, OSHA and EPA.

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THE COVER — Under Peter Miller's watchful supervision, a new green takes shape at Firestone. Tractor-drawn sod trailers bring the material right to the workers. Miller has been superintendent at Firestone Country Club for 7 years.

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Editorial

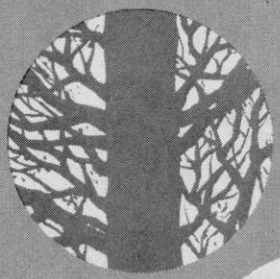
We congratulate the American Sod Producers Association (ASPA) for their campaign to build membership. At the just completed national meeting in Kansas City, ASPA announced a new total of 300 members which approaches 30% of the cultivated sod growers.

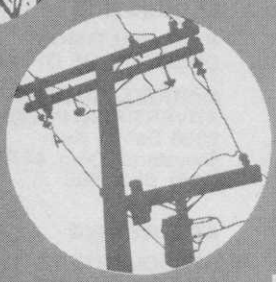
Many activities account for the success of this group which was first formally organized in 1967, but we believe one of their later innovations for gaining members — the key man idea — has helped greatly. Gerry Brouwer, grower and manufacturer of Keswick, Ontario, Canada, an outgoing board member, has most recently served as membership chairman. At the Kansas City session, he introduced most of the 31 key men organized by the ASPA to sign up new members. A "key man" is recruited for each sod producing state and given the assignment to contact his fellow state growers.

Naturally, to make membership worthwhile, an association or society, or foundation, has to offer a program of value to the member. Basically, regardless of the industry, the program needs are about the same. They must offer a strong professional base. Technical industry information based on new techniques is foremost. How these are presented may vary from formal educational sessions to newsletters to field demonstrations and many others.

But these are the base which pay dividends to the members. In the case of the ASPA — and we use this example because their program and growth has been typical — members and non-member growers in numbers — were attracted by field demonstrations which brought together the special mechanical equipment needed to harvest sod. The ASPA also brought together those turfgrass researchers and teachers who provided the technical data necessary for successful cultivated sod production and marketing. They offered information from both university and industry. Coupled with legislative activities and the normal informal member to member exchange of ideas, the association made itself invaluable to the individual grower. The mystery is why any

(Continued on page 48)



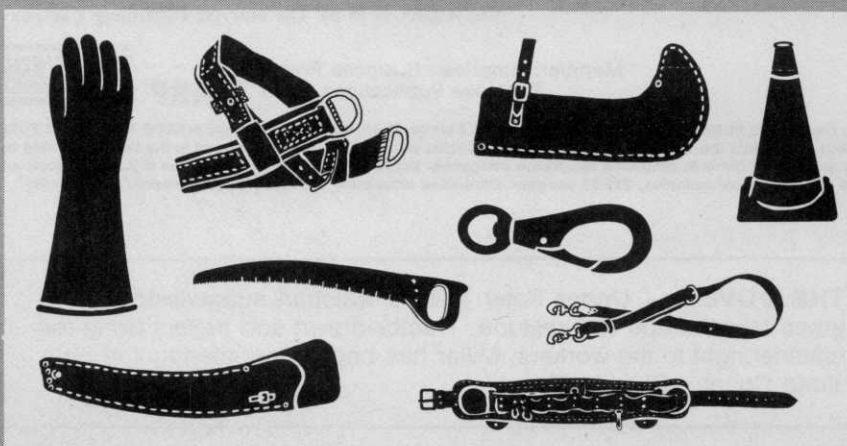


TOUGH RUGGED HARDWARE for TOUGH RUGGED HARDWOOD

Durability in hardware and confidence in tested products are top priorities for you and the linemen you equip.

Safety Test, Inc., manufacturers and distributors of tree trimming and lineman's equipment, has the tools and accessories that your men have confidence in . . . safety tested products of proven durability. Tough tools! Sturdy, practical accessories! Everything they need for a good job done fast. In anybody's book, that saves money!

WRITE OR CALL SAFETY TEST FOR YOUR FREE CATALOGUE.



SAFETY TEST, INC.

Manufacturers of
WOOD/CHUCK Chipper.
Drawer 400-A, Shelby, N.C. 28150
(704) 432-7346

For ad on following page Circle 112 on free information card

Ford 4110 LCG with 917 Flail Mower

Ford makes the PGA cut

Year after year, Ford mows for the pro's. At Firestone Country Club, and at championship fairways coast to coast, Ford tractor-mowers perform beautifully. Cutting smoothly. Evenly. Helping to groom rugged courses for top events like the 1975 PGA Tournament.

Now you can get similar results on your own lawn, regardless of its size. With a Ford lawn and garden tractor that lets you ride in comfort on a deep-padded seat. Or a Ford riding mower that tilts on end for space-saving storage. Or a Ford walk-behind mower featuring remarkable Air Action that stands grass up for even mowing.

Help give your grounds that greenskeeper's touch. See all the better ideas from Ford. Including garden tillers and chain saws. At your Ford Tractor lawn and garden equipment dealer. Look for him in the Yellow Pages under "Lawn Mowers."

Ford-for the long run

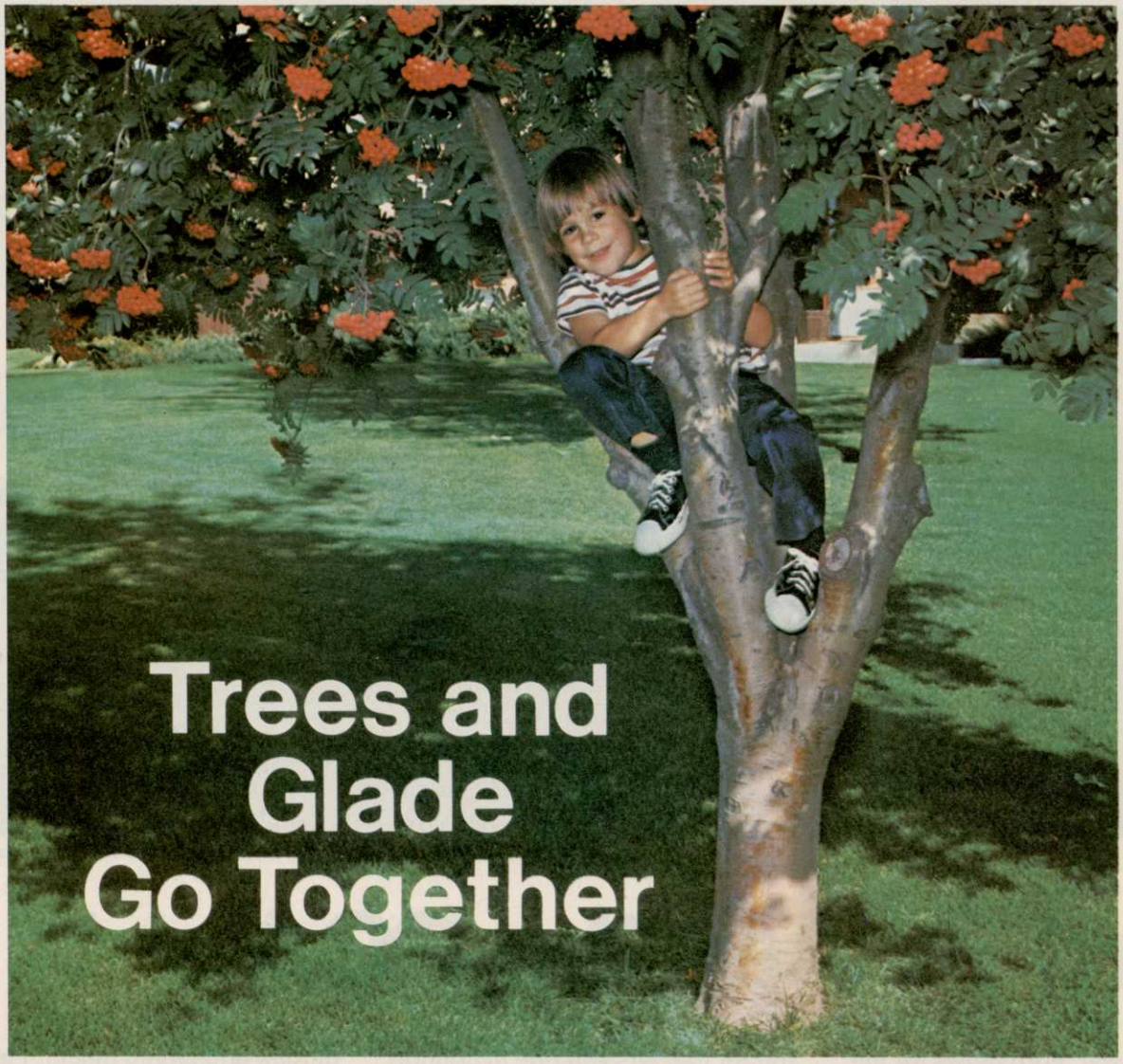
FORD TRACTORS

Ford

Ford lawn and garden tractor

Ford riding mower

Ford walk-behind mower



A new natural team, Glade Kentucky bluegrass and trees! Glade performs well in moderate shade, especially when mixed with fine fescues. A selection from Rutgers University (tested as P-29), Glade is an improved, low-growing, medium to dark green grass with fine leaf texture and thick, rapid-growing rhizome and root system. Glade has good resistance to important turfgrass diseases including powdery mildew.

Like boys and trees, Glade and shade go together. Mixed with other elite bluegrasses and fine fescues in moderate shade, Glade is a natural.

Get new Glade at local wholesale seed distributors.

Another fine product of Jacklin Seed Company

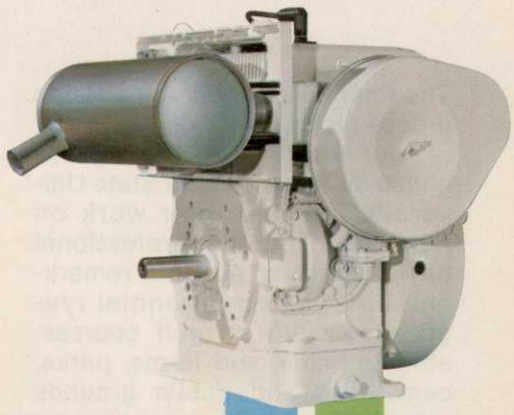
Glade

KENTUCKY BLUEGRASS

U. S. Plant Patent 3151

Kohler 'Quiet plus' engines.

Designed to make equipment quieter.



Kohler introduces a full line of "Quiet-plus" engines, both one- and two-cylinder models. Soft-spoken, air-cooled, cast iron engines that deliver big Kohler performance *plus* a dramatic noise reduction system . . . efficient mufflers, quiet-breathing carburetors, shrouded cooling. And designed to run hard and cool within a *closed* engine compartment—requiring only one intake and one exhaust duct. All of which results in a substantial reduction in dbA*

Until now there was nothing but a lot of noise about noise. Now there are "Quiet-plus" engines. Only from Kohler.

. . . no wonder 7 out of 10 major manufacturers of garden tractors specify Kohler 4-cycle engines.

KOHLER CO., KOHLER, WI 53044

*Test data available on request.

Pennfine Perennial Ryegrass.

If it's got a weakness, nobody's found it. But we have heard about some new strengths.

The Pennfine story gets better as it goes along.

Four years ago, the agronomists at Pennsylvania State University finished their work on Pennfine. And the professional turf community put this remarkable fine-leafed perennial ryegrass to work on golf courses, athletic fields, sod farms, parks, cemeteries and public grounds across the country.

Clean-cutting Pennfine *Other fine-leafed ryegrasses*

The ultimate test.

Now, after thousands of grounds maintenance pros have used Pennfine, nobody's reported a real weakness. All the characteristics the Penn State agronomists selected for—unsurpassed mowability, excellent disease resistance, exceptional decumbency, persistence under diverse management conditions, fine texture and compatibility with Kentucky Bluegrass — have proven out in the real world. That's the ultimate test.

Dr. Joe Duich of Penn State inspecting a new application for Pennfine: Independence National Historical Park, Philadelphia.

In fact, Pennfine has performed even better in some areas than anticipated. It's proven to be more tolerant to both shade and heat. It's shown excellent rust resistance on the West Coast. And, although Pennfine showed good to excellent disease tolerance in university trials, its disease tolerance appears to be even stronger in actual use.

Pennfine production fields in the Pacific Northwest where a major effort is underway to meet growing demand for seed.

Increased production.

From the very beginning, there's been only one problem with Pennfine: not enough seed to meet demand. And that problem is just about solved with substantially increased production. We can't make you a flat promise. But, if you order fairly soon, you should be able to get Pennfine seed in the quantity you want.

On the other hand, maybe you're still not convinced. In that case, we'll send you a test kit with enough Pennfine seed for you to develop a 100 sq. ft. test plot. And you can try to find a weakness on your own turf.

Either way, whether you seed Pennfine this year or just test it, we think you'll be impressed by the results.

WTT-8

☐ Let me know how I can order Pennfine Perennial Ryegrass.

☐ I'm still not convinced. Send me a Pennfine Test Kit.

Pennfine PERENNIAL RYEGRASS

Name_____

Title_____

Club or Company_____

Address_____

City_____ State_____ Zip_____

Please Note: The test kit offer is restricted to turf professionals, people whose livelihood depends on the establishment and maintenance of quality turf.

Mail to: Pennfine Perennial Ryegrass, P.O. Box 923, Minneapolis, Mn 55440.

Servis machines are built with one simple idea in mind.

To be the best.

If you're familiar with the name, Servis, you know that we've been manufacturing rotary mowers, cutters and shredders, box scrapers, landscape rakes and rear-mounted blades for a long time. Since 1946 to be exact.

Interestingly enough, some of the first equipment we put in the field is still being used today. That's dependability.

And that kind of dependability is no accident. Servis equipment is designed to do specific jobs. And to do them better than anything else. It's also designed to last.

Take construction. Servis frameworks are unibody constructed to provide extra frame strength. And the high-stress areas are reinforced with heavy gauge tubing.

In addition, all of our rotary cutters feature safety devices to protect the tractor and cutter drive trains.

The gears and gear box shafts used on our machines are precision machined to increase strength and durability, and reduce noise.

And Servis is one of the few lines of equipment that offers you an option of blade carriers on rotary cutters. The Cyclone (dish-pan type) for cutting up to 3" brush. And the Gyro ("A" frame type) for cutting heavy 4" brush.

Of course, this is only part of our story. The point is that Servis builds a complete line of equipment with one simple idea in mind. To be the best.

So whether you've got 4" brush to cut, stalks to shred, ditches to dig, soil to move or land to level, see your Servis dealer. He's got the equipment you need.

For more information about the Servis line, contact your nearest authorized Servis dealer, or write: Austin Products, Inc., Dept. 2-75 S, P.O. Box 1590, Dallas, Texas 75221.

SERVIS

We build equipment the way we do because you wouldn't settle for less.

Circle 122 on free information card

Repair or Replace?

An Economical Guide to Mower Life Expectancy

By J. R. WATSON, Vice President, Customer Relations, The Toro Co.

IN ORDER to obtain maximum efficiency from the equipment used to maintain and groom any turfgrass facility, the turfgrass manager must first have access to some very pertinent data. He needs to know; What are the tasks that must be accomplished? What does he have available to do those jobs, in terms of budget, manpower and current equipment? What degree of maintenance does his equipment get? And at what point, should that equipment be replaced rather than repaired?

It isn't sufficient to know his current labor force and what their pay scales are now. He also must be able to project what these are apt to be one or two or three years hence. Are there any prospects that his facility may be expanded or redesigned? Such information will, of course, have a profound effect upon labor and equipment needs. Finally, the turfgrass manager should be aware of what new equipment is on the market, what it will and — even more importantly — what it won't do, what its life span is, and a host of other considerations.

In other words, he must have a plan of operations based on accurate records. One cannot emphasize enough the overriding importance of clear, concise operating records. They are the measuring stick of what is being done and a guide to future decisions. They are truly the key to good management.

Toro has developed a simple record form for registering, by machine and operator, such items as: hours operated, gas and oil consumption, down hours, service required, replacement parts and labor costs. At the end of the cutting season, these records will show the number of hours the equipment has been operated, plus the cost of

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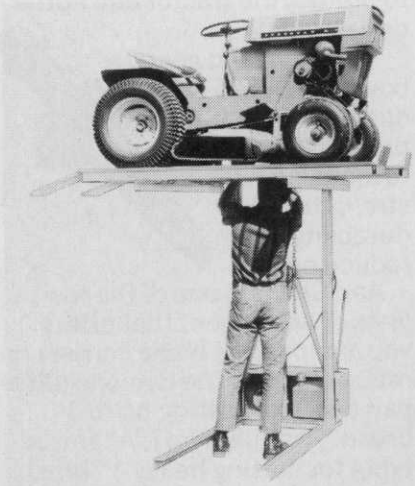


A common rule for determining replacement time is when the total costs of repair reach 50 percent of the original purchase price. This process can be hastened, manufacturers say, by using the machine for the wrong job. When choosing equipment: (A) Consider the terrain to be cut. (B) Consider the size of the area and buy the largest machine practical. (C) Look for simplicity of design. (D) Check for construction and durability. Other considerations may also improve efficiency.

For ad on following page Circle 119 on free information card

By December, 1975 the Cushman golf car will be a legend.

It almost seems incredible to those who have known Cushman golf cars over the years, but by the end of 1975, Cushman will no longer manufacture golf cars.

To us, it's rather sad news. To you, it means incredibly low prices on a premium golf car.

In fact, it's probably the last time you'll be able to buy a truly great golf car. As you know, most of today's golf cars have become stripped-down versions of the original Cushman. They have sacrificed player conveniences, beautiful styling and rugged construction for price. At Cushman we just couldn't do that. So we're offering the last of our premium cars at extreme reductions.

Parts availability is guaranteed for a minimum of 7 years. So whether you're looking for a fleet or your own personal car, see your Cushman distributor.

Or write to us. Together we'll find the cars you need at a price you can afford.

We will still be putting our efforts into the other products we made famous... like Cushman industrial/commercial vehicles and Cushman turf vehicles. We will continue to offer products that increase productivity and cut costs. But we will not sacrifice our quality.

CUSHMAN®

OMC-Lincoln,
a Division of Outboard Marine Corporation
4356 Cushman Dr., P.O. Box 82409,
Lincoln, Nebraska, 68501

Europeans Examine U.S. Implant System

By WARREN WOLFE, Creative Sales, Inc.

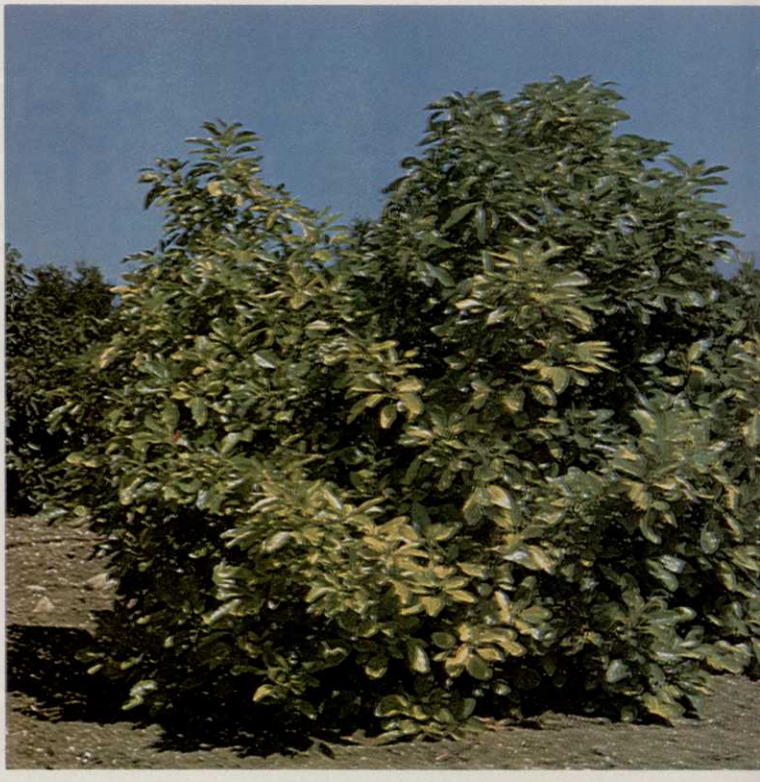
REVIEWING the history of tree implantation or tree trunk injection, we readily admit that we are not the "pioneers of the system". Leonardo da Vinci is given credit for introducing chemicals into trees (via an auger) as early as the 15th century. Was his idea really that "undesireable"? It appears his only shortcoming was to develop an easy-to-use, economical, commercial technique to place the chemical into the tree's system.

With the advent of the first commercially offered trunk injection applicators in the late 1950's; it's easy to think of one or another of the popular injection techniques as being the answer to nearly all tree problems or pests. In reality, however, systemic injection is still in it's infancy. We could list many reasons why tree service companies, commercial growers, landscape pest control operators, and homeowners are still spraying the tree foliage or introducing chemicals into the soil. It is increasingly evident that new improved injection techniques have in fact increased the total awareness, interest and use of direct trunk injection. While we don't hear the term "ecology" used quite as much today, the public is still very concerned about our environment. And the preservation and care of our valuable shade trees is gaining enthusiasm.

In early 1973 one of Italy's leading chemical marketers became interested in Iron MEDICAPS for testing on peaches, pears, grapes, and citrus. The calcareous soils abundant in the Mediterranean often

(continued on page 40)

European fruit growers are expressing quick and positive interest in incapsulated iron for chlorosis control. **Above:** *Dr. Alberto Giacchero (left), MONTESHELL managing director, Warren Wolfe, and Dr. Flavio Lucchi, managing director (MONTESHELL) discuss 1975 test market plans for Italy.* **Below:** *The tree on the left is a Clark Avacado with severe chlorosis. This picture was taken the day of treatment as part of a 1974 University of Southern California implant test. The picture on the right shows the same tree two months later. Researchers claimed the treatment is economical for fruit trees in arid calcareous soils were lime-induced chlorosis may be expensive to control using chelates.*



EPA recently filed notice to persons responsible for Federal registration of pesticides and Federal requirements for registration of intrastate pesticides stating:

> "As provided therein persons holding State Registrations for pesticide products that are not registered under the Federal Insecticide, Fungicide, and Rodenticide Act are required to submit a completed "Notice of Application for Federal Registration for an Intrastate Pesticide Product" (EPA Form 8570-8) within 60 days of the effective date of regulations under Section 3 of FIFRA, as amended; otherwise such pesticide products can no longer be lawfully shipped after that period. Since Section 3 Regulations have been promulgated, the cut-off date for filing such notice will be letters postmarked no later than October 4, 1975."

The form is only applicable to products that meet the following criteria:

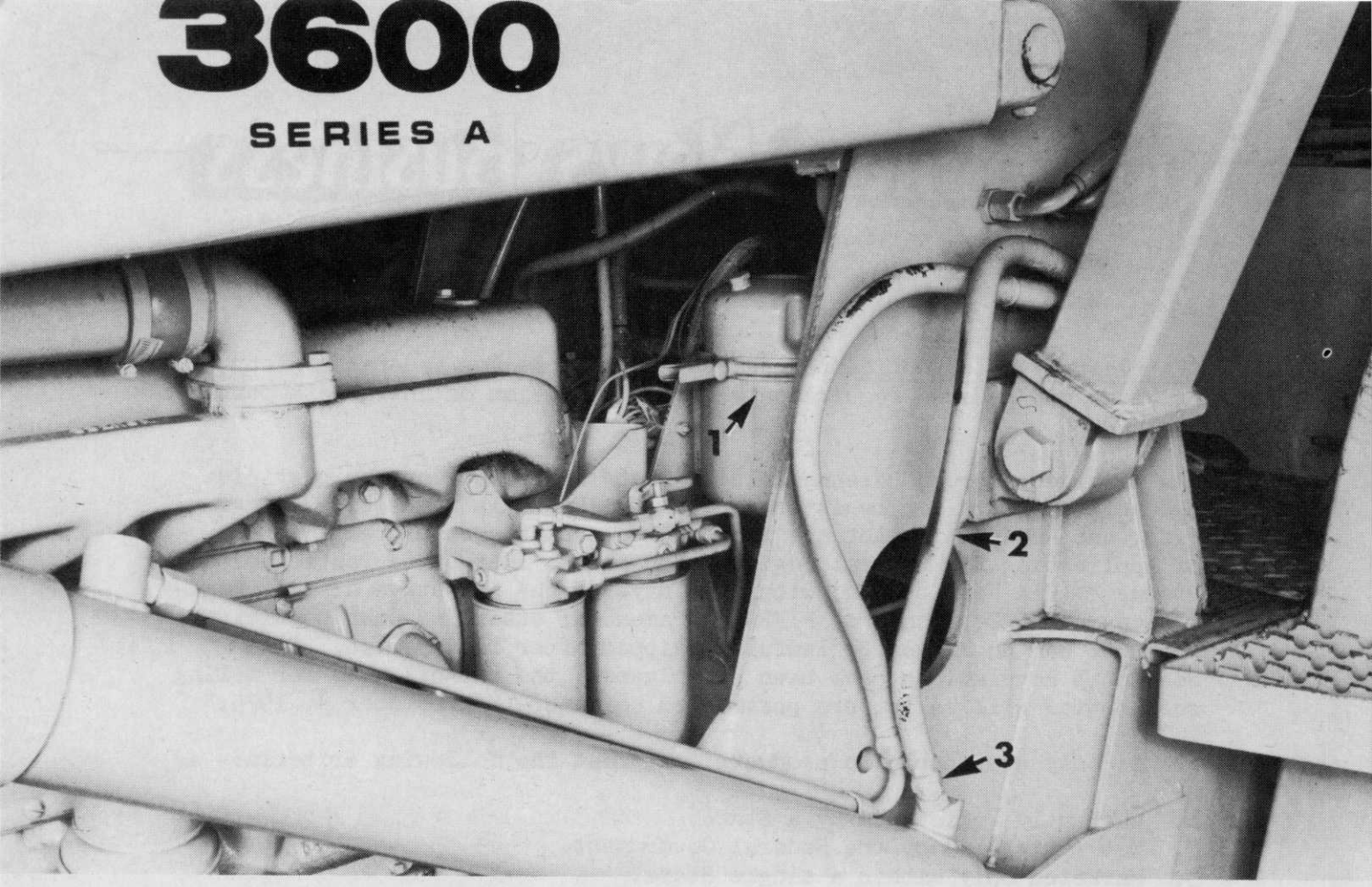
1. Currently registered by a State.
2. Not registered by the Federal Government.
3. Marketed only within a single State.
4. Does not contain chemicals or use patterns subject to suspension or denial actions by the Agency of which have been cancelled for substantive causes.

Outboard Marine Corporation announced that the production of motorized golf cars will end in December. Sales figures from fiscal 1974 and thus far in the current fiscal year indicate losses. Golf car sales accounted for about 2 percent of fiscal 1974 sales of $480.1 million.

OSHA issued final rules on procedures for formal administrative proceedings to withdraw initial or final approval of state safety and health plans. Under the rules, effective June 30, OSHA will consider the following as cause for initiating withdraw proceedings:

> When a state has not substantially completed steps of its plan at the end of three years from the date it began operations under an initially approved plan.
>
> When there is no longer a "reasonable expectation" that a state plan will meet the criteria for completion of developmental steps within the three year period.

OSHA boss, John H. Stender, announced the availability of three new free booklets covering various phases of programs and policy of OSHA. The three booklets are: "SBA Loans for OSHA Compliance," "Protection for Workers in Imminent Danger," and "How OSHA Monitors State Plans." Stender explained that each booklet will be part of four series of pamphlets designed to assist employers and employees in understanding and complying with OSHA standards and regulations. Copies of the booklets can be requested from OSHA regional offices or from OSHA's Office of Publications, Room N-3644, Washington, D.C. 20210.



Hydraulic Maintenance Is Back

By J. L. LOVE, Service Supervisor, International Harvester

ALMOST EVERY PIECE of industrial equipment today uses hydraulics. The hydraulic systems used have become so refined in the past few years that proper maintenance is no longer a "do as I have time" situation but an absolute necessity, if proper performance and longevity of the system is to be expected.

All hydraulic systems used today contain some type of filtration. This may be composed of:

1. Suction line filters,
2. Return line filters, or
3. Pressure line filters.

One or more of these filters are used in addition to a screen which may be incorporated in the reservoir filler. The manufacturer's recommended change period should be followed. Suction and return lines filters quite often have an initial change at less than 50 hours operation to ensure initial system cleaning and then an additional change at 100 hours.

This ensures that any contaminant which may have been in the system as well as from wear-in of components is removed from the system prior to its causing damage to other components of the system such as relief valves, control valve spools, or cylinder piston seals. The filters then require changing at regular intervals as indicated in the manufacturer's operator's manual.

Return line filters are placed between the last valve or component and the reservoir. This removes any contamination generated in the hydraulic system preventing its returning to the reservoir and subsequently into the remainder of the system.

Pressure line filters when used as a primary filtering element may have the same change interval as suction or return line filters. Some systems incorporate a pressure line filter only as a safety filter. This element is placed after a specific component so in case of a failure the entire system will not be contaminated. This element is only changed after a failure of a component upstream of the filter or at manufacturer's recommended interval.

Whenever a hydraulic system is plagued with repeated failures of relief valves and/or cylinder piston seals, the hydraulic filters should be checked. Quite often the filter incorporates a by-pass valve to prevent starvation of the hydraulic pump. When the filter element becomes plugged with contaminants to the

(continued on page 18)

Above:

1. Filter: *May be suction or pressure filter. Should be serviced regularly at manufacturer's recommended intervals.*

2. Hoses: *Must be routed properly to avoid sharp corners, prevent sharp bends or kinks and twisting of the hose.*

3. Fittings: *Must be kept tight to prevent leaks.*

SKID STEER LOADERS

The Little, Big Machines

COMPACT, four-wheel-drive, skid steer loaders continue to rise in popularity as industrial materials handling machines. And for good reason: the two most important and obvious features of the little machines are maneuverability and versatility.

And while the dozen or more loader models currently available appear to be almost carbon copies of one another, there are important differences to consider in selecting the best machine for your particular needs.

All skid steer loaders have the same basic design characteristics: they're relatively compact; all four wheels are the same size; each is power driven.

Additionally, not one of a skid steer loader's four wheels pivots for steering. Both wheels on each side of the machine are powered in unison and can be driven forward, reverse, or stopped independently of the wheels on the opposite side. Steering direction is obtained by independent control of the wheel rotation on each side of the vehicle.

Engines on skid steer loaders are located over the machines' rear wheels, providing an effective counterweight for lifting loads. Engine location over the rear places the operator's station up front, affording unobstructed visibility.

Engine power is transmitted by either of two drives, mechanical or hydraulic. With one set of wheels in reverse and the other set driven in counter rotation, the skid steer loader will pivot around its own midpoint, producing the shortest possible turning radius.

Use Determines Size and Equipment

Skid steer loaders are available in a wide range of sizes. Although the best guidelines to loader size are rated operating load and engine horsepower, a further measure of a machine is its tipping load.

Tipping load is the maximum weight a loader can lift without tipping forward, and the machine's rated operating load is calculated at one-half its tipping load. At rated operating load, then, a loader is well within the limits of safe operation.

Skid steer loaders are available with rated operating loads ranging from 500 to 3,000 lbs., with machines in the 1,000 to 1,500 range representing the most popular sizes.

On all machines, several different bucket sizes are available to adapt the loader for use with various materials. Larger buckets speed productivity when handling relatively light materials. With heavier materials, smaller buckets permit greater maneuver-

(continued on page 34)

HYDRAULICS *(from page 16)*

point at which it will not pass sufficient fluid to satisfy the system's demand, the by-pass valve will open. There is usually a screen over this valve to prevent passage of large particles of contaminants but small minute particles can pass through the screen and lead to early relief valve or cylinder piston seal failures.

Another part of the hydraulic system that is probably the most ignored component in the entire system is the hydraulic fluid. Certainly, fluid is added, usually when it gets low enough that it causes aeration (noise) in the hydraulic system. Hydraulic fluid has several additives in it to prevent foaming and corrosion, aid in water suspension, provide ease of flow under low ambient temperatures. These additives break down after prolonged use and these properties are lost. Most manufacturers recommend that hydraulic fluid be changed at least yearly or after a specific number of hours of operation. Other manufacturers, if the system is in constant use and maintained at a fairly constant temperature, extend this change period. In some cases of extreme moisture, condensation or use, the change suggested, a yearly change, in the fall of the year, would usually be beneficial.

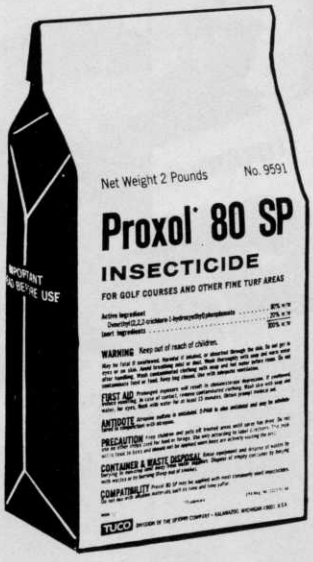
Practically all hydraulic systems utilize hoses to some extent. The proper routing and the elements to which these hoses are exposed can greatly affect their life. All hoses should be routed to prevent sharp bends or kinks in the line as well as preventing any twist in the hose. The hose should be properly supported while the fittings are being tightened to prevent the hose itself from turning with the fitting resulting in a twist in the hose.

CAUTION: If a leak does occur in a hose, one should never place his hand over the leak. Most systems operate at high pressure and the pressure of the fluid escaping from the leak can be great enough to puncture the skin. Due to the additives in the fluid as well as some of the contaminants in the fluid, infection can result. If the skin is punctured, a physician should be consulted immediately.

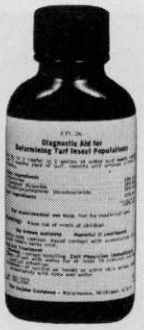
Normal maintenance of the system which would include tightening of loose fittings, correction of leaks and replacements of seals as required is also a necessity. A small leak not only results in an unsightly machine but also results in a necessity to add fluid frequently. This small leak can add up to many dollars in wasted fluid in a short period of time.

Proper maintenance of a hydraulic system is not only a necessity to attain proper performance from the machines involved, but also means good business as correction of minor problems as they occur can prevent major problems from happening later. A few dollars spent today can prevent many dollars spent or lost later to correct a once minor problem which has resulted in a major breakdown and costly downtime. □

Take the guesswork out of turf insect control



Diagnostic Aid from TUCO



Many turf insect larvae are night feeders, so the first evidence of their activity frequently is damaged turf. Diagnostic Aid, applied to turf as directed, causes insects to emerge to the surface within 10 minutes. They can be identified and counted to determine the level of infestation and whether an insecticide should be applied. It also can be used after insecticide application to measure the control obtained.

Proxol* 80 SP Insecticide from TUCO

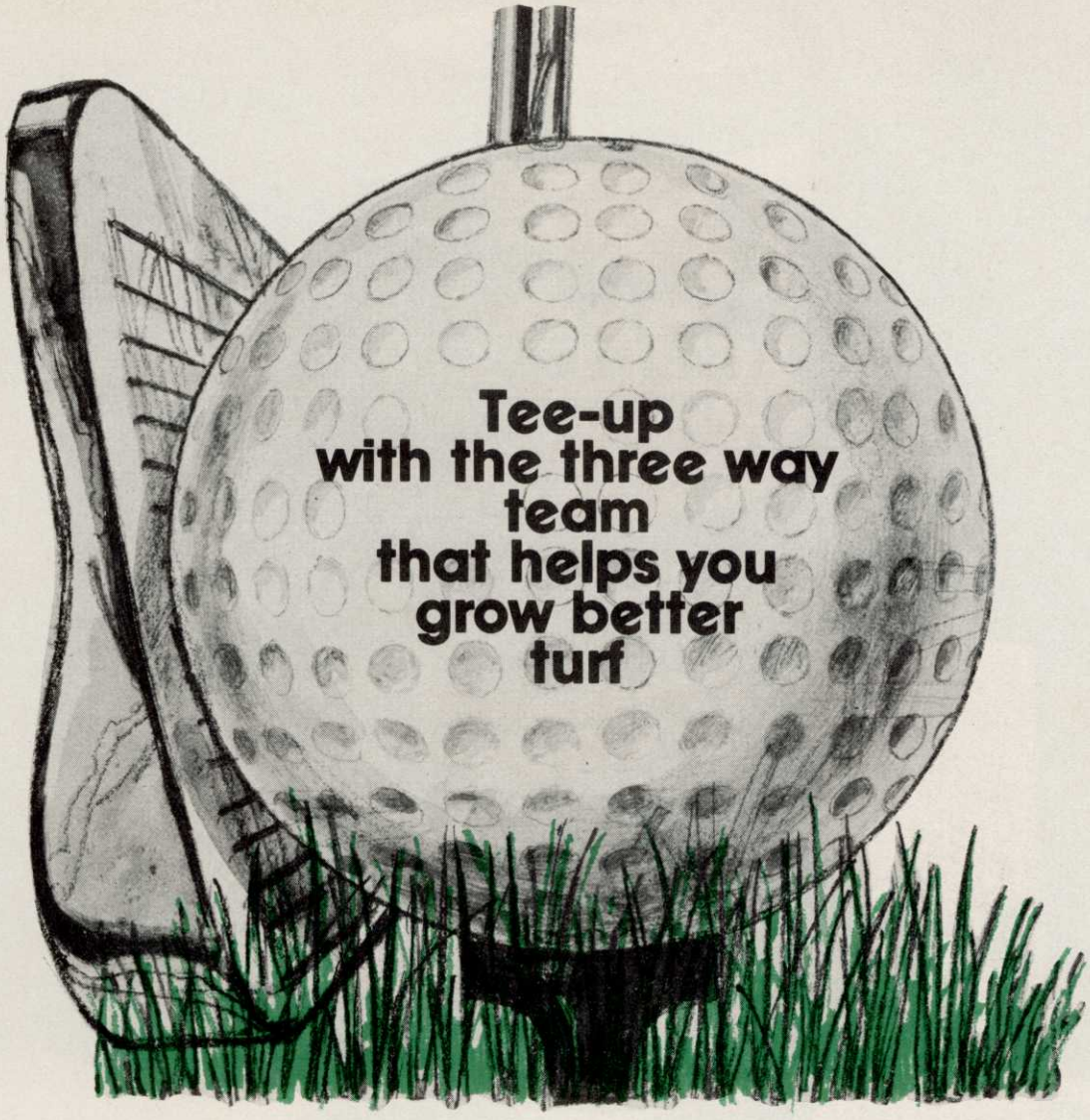
Proxol is the one insecticide developed especially for use on fine turf and ornamentals. Sod webworms and cutworms are two major groups of turf insects controlled by Proxol. It is estimated that each sod webworm larva can chew up 20 square inches of turf in its average life span of 20 to 40 days; the cutworm larva can devour up to 36 square inches. With 300 to 500 larvae generated from each adult in a period of 10 to 21 days, it becomes apparent why early detection and control are desirable. Using Diagnostic Aid and Proxol together lets you program insect control.

*Trademark

One bottle of Diagnostic Aid FREE in each case of Proxol 80 SP.

BEFORE USING ANY PESTICIDE STOP READ THE LABEL

TUCO Division of The Upjohn Company, Kalamazoo, Michigan 49001



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Three proven products from Rohm and Haas to make your job a little easier and your course or grounds more attractive. KERB 50-W herbicide stops Poa annua in Bermudagrass, can be applied anytime from pre-germination to seed formation. FORE fungicide protects turf and ornamentals from a wide range of fungus diseases including Brown Patch, Fusarium blight and certain other damaging diseases of turf. TRITON CS-7 wetting agent has been shown useful in removing dew from greens, and as an aid in increasing water penetration. Ask your chemical supplier for additional information on teaming up these products this year.

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NET CONTENTS 5 GALLONS
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"THE RIGHT APPROACH"™ TO GOOD TURF
CHIPCO TURF HERBICIDE "D"
CHIPCO TURF HERBICIDE "D"
For control of broadleaf weeds in turf, including golf courses, parks, grounds, and other non-crop turf areas.
NET CONTENTS 5 GALLONS
CAUTION: Keep Out of Reach of Children
CHIPCO THIRAM 75
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TURF FUNGICIDE
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CHIPCO SPOT KLEEN
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"THE RIGHT APPROACH"™ TO GOOD TURF
CHIPCO BUCTRIL
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For the Control of Certain Broadleaf Weeds in Newly Planted Grasses for Sod or Seed Production
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Do NOT Store with Foodstuffs
DO NOT USE, POUR, SPILL, OR STORE NEAR HEAT OR OPEN FLAME
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Do NOT Store with Foodstuffs
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FOR TURF and ORNAMENTAL SPRAYS
CAUTION:
NET CONTENTS ONE GALLON
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A blend of metal organo complexes of iron, zinc, manganese, and copper for the correction of turf nutritional deficiencies
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CAUTION: Keep Out of Reach of Children

You're looking at the most effective arsenal ever assembled to protect your turf.

With this formidable array of armament on your side, you have a broad spectrum turf management program that can ward off just about any attack.

And you can manage it all with surprising economy. Chipco products protect the green of your turf without straining the green in your budget.

Just try any one of them, and you'll want the entire arsenal. Because once you use a Chipco anything, you'll soon be using Chipco everything else.

Chipco Buctril® gives early control of broadleaf weeds in newly planted grasses for sod or seed production.

Chipco Turf Herbicide MCPP controls clover, chickweed, knotweed and other surface creeping weeds and is safe and effective for use on most bent grasses.

Chipco Turf Kleen is a broad spectrum herbicide that controls broadleaf and surface creeping weeds with a wide margin of safety around trees and shrubs.

Chipco Spot Kleen is a systemic fungicide for control of dollar spot, Fusarium blight, stripe smut, large brown patch and copper spot.

Chipco Thiram 75 prevents and controls snow mold, large brown patch and dollar spot. Used with Spot Kleen, it offers a complete disease control program.

Chipco Microgreen Liquid provides micronutrients to your turf which results in long lasting deep green color, more root growth and less desiccation.

Chipco Turf Herbicide D is a general purpose broadleaf herbicide ideally suited where economical control is desired.

Chipco Spreader Activator is a superior adjuvant to increase the efficiency and effectiveness of turf chemicals.

Chipco Crab Kleen gives economical and selective post-emergence control of crab grass, chickweed and other grassy weeds in established turf.

Rhodia

Rhodia Inc., Agricultural Division, Somerset, New Jersey 08873

"End of Line" Says Cushman

Outboard Marine Corporation announced that it will cease the manufacture and sale of its Cushman golf cars when the current production schedule is completed in December 1975.

Charles D. Strang, president of this manufacturer of Evinrude and Johnson outboard motors and other leisure products, stated, "Earnings from our golf cars have been declining for several years, and we incurred losses from the sale of this product in 1974 and in the current year. Increased competition from low-priced foreign imports has been a significant factor in this deteriorating profit picture." Strang added, "Careful analysis has convinced us we can utilize our capital and personnel better on other products."

Strang indicated that golf cars represented approximately 2 percent of OMC's total sales in its 1974 fiscal year. He also commented that present estimates of the loss resulting from the phasing out of golf car operations will not have a material effect on OMC's earnings. He stated, "Preliminary data indicates that OMC net earnings for the July 1975 quarter will exceed $1.50 per share, after reflecting estimated golf car losses. The company's net sales for this third fiscal quarter should exceed $155,000,000." In its strike-affected quarter ended June 30, 1974, OMC reported earnings of 44 cents per share which was restated for subsequently discontinued snow vehicle operations to 69 cents per share on sale of $123,200,000, both on continuing operations.

Herbert A. Jespersen, OMC vice president and division manager of the OMC-Lincoln division said, "Commercial and turf vehicles and parts which represent approximately two-thirds of Cushman's sales are unaffected by today's decision. Consistent with OMC's policy, service and parts for golf cars will be available for a minimum of seven years."

Standard Oil Subsidiary Files Appeal for More Gas

The Standard Oil Co. (Ohio) and its subsidiary, Vistron Corporation, have appealed to the Federal Power Commission for help in obtaining adequate supplies of natural gas to produce needed fertilizer.

The natural gas is used in the nitrogen fertilizer plant at Vistron's complex at Lima, Ohio which is the exclusive source of nitrogen fertilizer for nearly all of Sohio's 108 bulk blend plants in Ohio, Michigan, Indiana, Illinois, Iowa, Missouri and Kansas.

"Curtailments earlier this year from our supplier, Columbia Gas of Ohio, Inc., ranged from 30 to 55 percent of normal deliveries," Stevens said, "and seriously crippled Vistron's production."

He said Columbia Gas recently notified Vistron that deliveries will be reduced by 60 percent, beginning November 1, for the five-month winter period which would further aggravate the present shortage of fertilizer.

Vistron asked the FPC to direct Columbia Gas to deliver an average of 50,070 mcf per calendar day and 54,960 per operating day to produce the required amount of fertilizer for Vistron's customers.

USDA Appropriates Funds, Speeds Pesticide Clearance

Data for clearing pesticides for uses not presently filled by industry registrations will be developed by the University of California at Davis under a $50,000 grant from the U. S. Department of Agriculture (USDA).

The Davis campus' department of environmental toxicology has been designated as the leader laboratory for the western region — one of four regional laboratories — to develop and implement a program to help register pesticides for uses on minor or specialty crops.

USDA's Cooperative State Research Service (CSRS), which made the grant, said Davis and three other regional laboratories would expedite analyses and collection of data for minor-use pesticide clearances. CSRS said the need for such laboratories was evident after passage of the 1972 Federal Environmental Pesticide Control Act, which increased requirements for registration of pesticides.

Scientists in the Western region have developed a list of 50 chemicals that need registration so they can be legally used under the new law. According to the scientists, there are an enormous number of chemicals which are not presently registered for use on ornamentals, grass, and seed crops, but are sorely needed in production practices.

The laboratory at Davis will serve the western states of Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming, and Guam. Wendell W. Kilgore, Chairman of the department of environmental toxicology of the University of California at Davis, is the laboratory's principal investigator.

Lethal Yellowing Research Boosted by New State Funds

Intensified research efforts, boosted by a special $200,000 state appropriation, are now underway as Florida scientists seek answers to lethal yellowing, the mysterious disease killing thousands of the state's scenic coconut palm trees.

The disease, first spotted 20 years ago in Key West, is creeping northward and now endangers over a half million coconut palms throughout the southern half of Florida. Swaying palms that once graced picture post cards are left bare, looking like a string of telephone poles. Fears are that unless the disease can be stopped it will continue northward posing a threat to coconut and possibly other palms throughout the State.

Backed by the new research funds from the state legislature, a team of scientists from the University of Florida's Institute of Food and Agricultural Sciences (IFAS) is hoping to find the missing pieces of the lethal yellowing puzzle.

The scientists, based in Fort

Lauderdale, seek the cause of the disease, how it is transmitted and how it can be stopped. Lethal yellowing began in Jamaica almost a century ago. It spread to other areas hitting Key West in 1955. From 1955 to 1968, it killed about 15,000 coconut palms in Key West, then jumped to Stock Island, then Key Largo, then Miami and Coral Gables and now has crept as far north as Juno Beach in Palm Beach County.

A quarantine is now in effect for movement of a dozen species of palms, including the coconut palm, out of Broward, Collier, Dade, Martin, Monroe, and Palm Beach Counties — all affected areas.

The symptoms of lethal yellowing begin with "shelling" or the premature dropping of coconuts. Leaves die, turning brown and yellow. The tree soon dies, usually within six months of exhibiting the first symptoms of the disease.

From former research, IFAS scientists have some clues to help solve the lethal yellowing mystery. Indications are that the disease is caused by a tiny microorganism called a mycoplasma-like organism or MLO. MLO's are like bacteria but have a soft rather than rigid cell wall like bacteria. Evidence seems to indicate the MLO's are taxied from tree to tree by insects taking up residence on coconut palms and it may be any one variety providing the free taxi service. "There certainly are a good many pieces we need to complete this puzzle," said Dr. L. H. Purdy, chairman of the IFAS Plant Pathology Department.

Infected trees can be granted some borrowed time by injecting doses of an antibiotic into the trunks under about 80 to 100 pounds of pressure. These injections hold off the symptoms for about four months when another injection is required, explained Dr. Purdy.

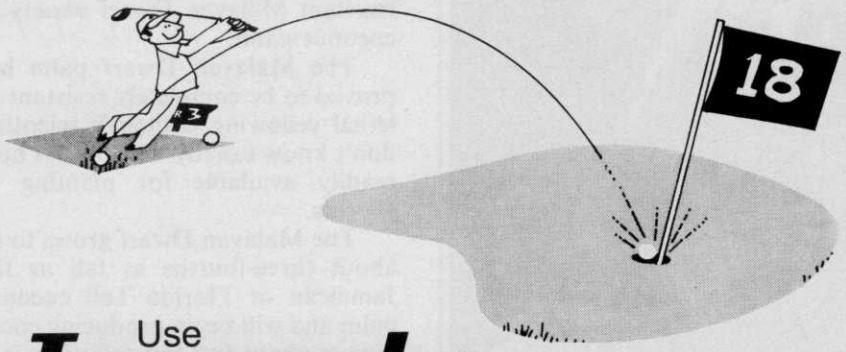
Meanwhile, as research continues, the Florida Cooperative Extension service, the Extension arm of IFAS, is also active in a program to help property owners and government officials stop lethal yellowing.

County agents in affected areas hold seminars and distribute literature to help people identify the disease. Some county agents — such as in Monroe and Collier Counties —

(continued)

Control your fungi problems

FROM TEE TO GREEN



Use **Terrazole®**

To Fight Cottony Blight, Grease Spot, Damping-Off

Terrazole soil fungicide is your best weapon against Pythium fungi—the cause of grease spot, damping-off and cottony blight in your turf.

With a case of Terrazole in your storage shed, you're set to act fast at the first sign of these turf diseases. Terrazole goes to work quickly and provides effective control of the problems caused by both Pythium and Phytophthora. Repeating at 5 to 10-day intervals provides preventive control. Keep your best weapon against Pythium on hand. Keep your greens green, your golfers happy.

Use **Terraclor®**

To Control Brown Patch

Terraclor soil fungicide is the answer to Rhizoctonia control—the fungus that contributes to the formation of Brown Patch in Southern turf grasses.

Terraclor is easy to apply in liquid or dry granular form. Usually one application at the first sign of disease is all it takes.

Be sure you have Terraclor on hand. It's good assurance for healthy fairways and greens.

Write for complete information.

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Please send me more information on Terrazole/Terraclor for a healthy turf.

The rare bird in the business

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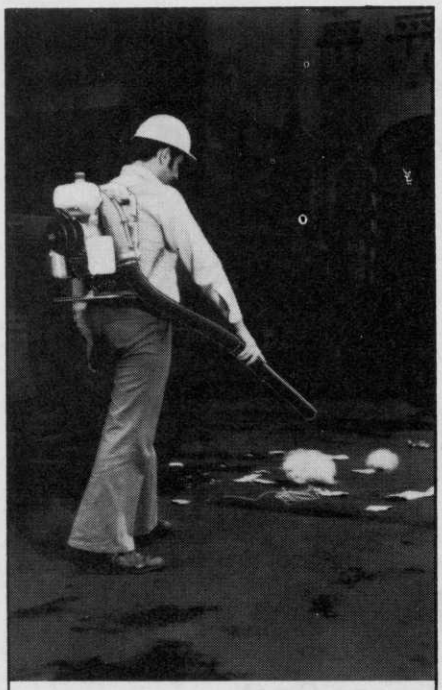
CAUTION: As with any pesticide, read the label carefully; follow directions.



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Air brooms come in two versions—with wheels or with shoulder straps. Wheels look comfy and modern, all right. But for blowing leaves out of flower beds, rock gardens or from under shrubs, for cleaning staircases, roofs, seat rows in arenas and convention centers, up ladders or down ships' holds, in trucks and rolling stock, or for blowing snow off a car dealer's merchandise on a cold Saturday morning—SOLO's ultra-mobile lightweight knapsack blowers have no wheeled competition. The SOLOs go where wheels don't.

410B 3 HP

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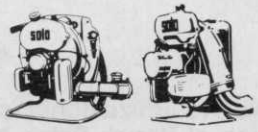

We offer two models, of 3 hp/35 cc. and 5 hp/70 cc., with special dust filters, comfortably padded adjustable shoulder straps and with a history of well-nigh 1,000,000 sales to back them up.

JETPAK 425

Your air broom clients are also interested in a good commercial herbicide sprayer. Our JETPACK-425 handles the most exotic weed and brush killers (plus wallpaper removers, concrete curing compounds, whitewash, swimming pool chemicals etc.) and won't quit. It's the only all-plastic sprayer on the market. No metal or rubber parts inside—thus, no swelling, shrinking, dissolving, leaking or corrosion. We guarantee that.

PORT-423 Chemical Mist Blower

SOLO supplies a wide line of blowers, sprayers, chain saws, tillers and other outdoor power products. We would like to tell you about our full line. Please give us a call.

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also help coordinate inspection and injection programs with various government agencies, urge removal of all diseased trees and give instruction on how to plant the disease-resistant Malayan Dwarf variety of coconut palm.

The Malayan Dwarf palm has proved to be completely resistant to lethal yellowing, although scientists don't know exactly why, and is now readily available for planting in Florida.

The Malayan Dwarf grows to be about three-fourths as tall as the Jamaican or Florida Tall coconut palm and will begin producing coconuts at about five feet tall when it is five to seven years old.

Dr. Purdy suggests that injections continue allowing time for replanting of the Malayan variety.

Earning Power Restored Economy Up, Says Simon

Real consumer earning power is being restored and the nation back on the road to economic recovery, William E. Simon, Secretary of the U. S. Treasury Department, reports.

Simon, writing for the Ryan quarterly dealer magazine, said the picture began brightening early this year when inventory backlogs were sharply reduced. He said recovery gained further momentum this quarter when retail sales rose at more than a 10 percent rate.

"That process had to get underway before our economy could rebound," Simon wrote. "Other indicators also show we are poised for a healthy recovery by late this year."

Simon said real consumer earning power has increased because interest rates have tumbled, inflation has dropped out of the double-digit bracket, and tax cuts have provided consumers more disposable income without corresponding inflation.

Although unemployment edged up to 9.2 percent in early summer, and is expected to remain around 8 percent through 1976, Simon says employment has increased for the for the first time in more than six months.

"That is extremely encouraging," Simon noted. "Our objective the next two years is to ensure strong enough recovery to reduce unemployment, but to avoid inflationary government spending programs that cannot stimulate the economy until we are already moving toward full capacity."

New Superior Tree Seeds Exchanged in Outer Space

A special box containing superior tree seeds developed by the Forest Service, U. S. Department of Agriculture, was delivered to the American flight crew of the Apollo-Soyuz space mission at the Lyndon B. Johnson Space Center. The seeds were given by the Astronauts to the Russian Cosmonauts as part of an exchange of gifts in space during the flight which began on July 15.

The seeds, and their container, are both products of Forest Service research. The seeds are genetically superior white spruce seeds which have been developed by Forest Service scientists to produce faster growing trees of exceptional height and shape. The spruce tree seeds were developed at the Institute of Forest Genetics in Rhinelander, Wis., which has a climate similar to that of Moscow in the U.S.S.R. where the seeds will pe planted. Enough superior tree seeds to grow an acre are being given the Cosmonauts.

The top half of the box in which the seeds were presented is made from chemically stabilized walnut, a development of Forest Service wood utilization research. The chemically treated wood won't shrink, warp, or rot, and is resistant to bugs, disease and decay.

The bottom half of the container is a composition wood made from 100 percent recycled fiber made from discarded municipal waste. The technique to recycle wood fiber waste material into new products was pioneered by the Forest Products Laboratory in Madison, Wis.

The seeds were recently presented in Washington, D.C., to Chester M. Lee, Program Director of the Apollo-Soyuz Test Project mission of the National Aeronautics and Space Administration by Forest Service Chief John R. McGuire. He said the seeds were symbols of the development of forest resources which has helped the United States and the Soviet Union to become world leaders.

(more NEWS page 38)

There was no sleeping on the job in the creation of a MAN MADE bluegrass!

SOMEBODY STAYED UP NIGHTS TO PRODUCE

Adelphi
KENTUCKY BLUEGRASS

RATED OUTSTANDING for overall performance in 10 years of testing at Rutgers University

Adelphi Kentucky Bluegrass is, truly, the product of many sleepless nights. The nature of bluegrass is such that hybridization can be achieved ONLY AT NIGHT and, there's no telling what time of night will be the right time.

So, aside from expertise and dedication, many patient night hours went into mating the parents of Adelphi. The result... ADELPHI KENTUCKY BLUEGRASS (U.S. Plant Patent No. 3150)... was well worth it.

ADELPHI, the first marketed, "Man-Made" Kentucky bluegrass has proven itself... with outstanding overall performance ratings in tests against as many as 60 new varieties... in New Jersey, Ohio, Michigan, Tennessee, Colorado, Rhode Island, Illinois and Washington.

ADELPHI is becoming a favorite of professional turfmen and home gardeners as well. For good looking and natural, richer, darker green color throughout the growing season... excellent density ... good disease resistance and tolerance to moderately close mowing, it's "Man-Made" ADELPHI... A FIRST IN TURF.

ADELPHI has been chosen by the Plant Variety Protection Office, U.S.D.A., as A STANDARD FOR DARK GREEN COLOR to which all bluegrasses applying for plant protection will be compared for color classification.

(Use of this statement does not indicate any approval or recommendation of Adelphi by the U.S.D.A.)

Try it. This grass shouldn't give YOU sleepless nights!

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Keeping Firestone in Championship Condition

By PETER MILLER, Superintendent, Firestone Country Club

TRACTORS are probably one of the most important pieces of equipment used in a golf course maintenance operation. If you take a look at most golf courses, you will probably see more tractors than any other piece of equipment.

Today, tractors in use range anywhere from a 1940 model to the lastest and best equipment on the market. The same tractors are used for a multitude of purposes. My object is to explain in this article just how valuable tractors are to a golf course maintenance operation, particularly the Firestone Country Club.

Going through a list of equipment attached to tractors, whether the pull-behind type or using the PTO and three-point hitch, it becomes obvious that a tractor is a very valuable piece of equipment.

It is probably the only motive force on the market that is capable of handling the number of attachments, different sizes, shapes and descriptions, and still provide an excellent service record. I am sure that most people on golf course operations are aware that when a piece of equipment is advertised to do many things, that in most cases, the equipment will do one or two things well. In most cases, it's better to buy individual pieces of equipment for the other operations.

A tractor is certainly an exception to that situation. I have mentioned numbers of attachments to tractors. We have approximately 42 different pieces of equipment that we use on essentially seven tractors. These tractors are medium size, horsepower-wise, and the majority of them diesel. As a matter of fact, five out of the seven are diesels.

We have approximately 800 acres of grounds to maintain at the Firestone Country Club. Included in these areas are some gardens, which we prepare with a tractor-powered roto-tiller; 80 acres of spectator parking lots where we use our flail mowers and rotary mowers to keep prepared for tournaments; also many miles of roadsides,where we use a tractor-mounted sickle bar.

The golf course itself, of course, is the major area for tractor and attachment use. The list here is quite long. We use tractor drawn aerifiers, slicers, turf quakers, verti cutters, blowers, and obviously for rough usage, mowers.

In all cases, there really is not a suitable replacement for a tractor. In other words, tractors must be used to provide the motive force for these operations.

We will run as many as 1,500 hours a year on these tractors, running them eight hours a day, five days a week, in most cases. This might not seem like a great number of hours to a construction company, but on a golf course, this is a good number of hours considering that the tractor is being used for many varied operations.

(continued on page 32)

Peter Miller, (top left), superintendent of Firestone Country Club, says that tractors are his most valuable piece of maintenance equipment. Shown in the above phtographs are just a few of the dozens of different tractor-drawn machines Miller uses to keep Firestone's two courses in top-notch playing condition. Both ends of a tractor-mounted loader-backhoe are put to good use digging ditches and loading topdressing into a dump truck. Transplanting shrubs on Firestone's grounds is speeded with a tractor-mounted auger. Fertilizer, pesticides and herbicides are applied with a tractor-pulled spray applicator. And even working as a team, greensmen operate aerator and blower attachments. Extra parking areas for the 57th PGA Tournament are mowed with a 100-inch rotary pull-type cutter. Miller also maintains a nursery area with a tractor-pulled rotovator.

Efficient Cultural Practices Vital to Sod-Farming Family

PRODUCING high quality turf in the hot, humid Southwestern Illinois climate is not an easy task, but Art Brockmeier of Edwardsville has proved it can be accomplished. He's been doing it since 1955 and his sod has been improving steadily — especially since he has developed added know-how in disease control.

Sod farming is a dawn-to-dusk business for Brockmeier and his wife, Dorothy, and son, Ken, who join efforts on 140 acres. They supply sod for homeowners, golf courses, nurseries, landscaping contractors, industrial plant sites, small businesses and highway median strips. The Brockmeiers alternate the sod with farm crops on part of their acreage and also operate a sizeable fill dirt and top soil business.

They work as a precision team, handling a variety of tasks including seeding sod, spraying chemicals, hauling dirt, cutting sod and working the farm crops. During summer vacations and after school, area high school students provide additional needed manpower.

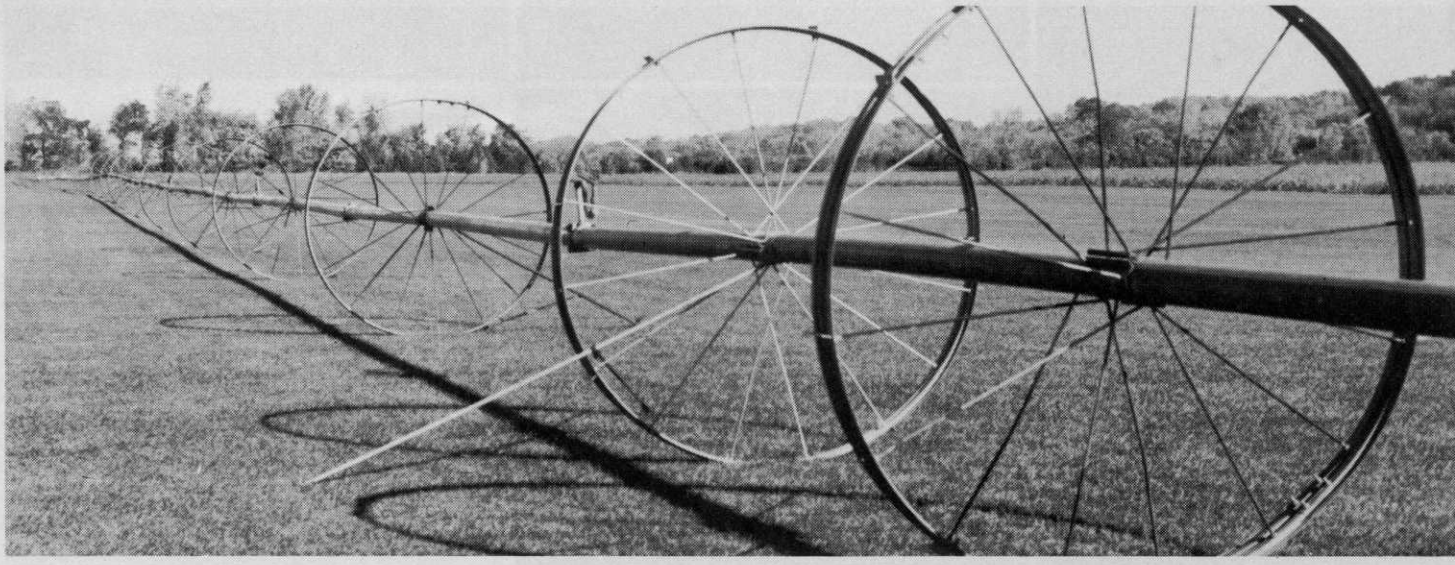
Throughout his 20 years as a sod farmer, Brockmeier has always stressed the importance of healthy grass in providing good sod. "The price of our sod is a bit higher than others in this area," Brockmeier says, "but we strive for top quality. I'm a believer in good cultural practices. We fertilize adequately, aerate properly and provide the needed water."

The Brockmeiers have experienced isolated disease problems. Two years ago, at a turf meeting, Brockmeier was convinced by a speaker that the proper use of fungicides could produce still better turf in his normally unfavorable climate.

"Last season, for the first time, I tried a planned fungicide program and experienced unbelievably good results in a dry year," he notes. "Fusarium blight is often a serious problem in our part of the country. It is especially troublesome when the hot, humid weather is followed by a

Keeping America green is more than an environmental theme to Art Brockmeier. These signs on his property communicate to the passerby his dedication to growing quality sod.

Below: *Rotating watering systems covers entire length of Brockmeier's sod field. Water goes on evenly as equipment rolls across sod. Sod from this family-owned and operated farm can be found throughout the Ewardsville, Ill. area in lawns at homes, small business and industrial plant sites.*



long dry spell. That was the situation in 1974, but 6 oz. of 'Tersan' 1991 per 1,000 square feet controlled the Fusarium blight. We applied it at the first appearance of the disease and repeated 10 to 14 days later."

Early Helminthosporium leafspot is another disease that has been a problem for Brockmeier. Last year, he applied "Tersan" LSR at a rate of 4 oz. per 1,000 square feet in 5 gallons of water when the disease first appeared in April. In areas where the disease persisted he made a second application about 10 days later. The disease was controlled. A third material, "Tersan" SP, was used at a rate of 4 oz. per 1,000 square feet in 5 gallons of water to control Pythium blight.

Water is most important both in the growth of healthy grass and in keeping the soil moisture high before and after the fungicide application for Fusarium blight control. We get our water from the Mississippi River Basin and use a field-length, circular watering system which rolls across the field as it waters. I'm now in the process of leveling portions of my fields, as some of the knolls get less water than I'd like, said Brockmeier.

Fertilizer also plays an important role in developing quality sod. "Fertilizer alone won't prevent disease," Brockmeier observes, "but properly fertilized grass is stronger and less subject to attacks by parasitic organisms. We like to use urea if we can get it. In addition, we use 'Tupersan' to control crabgrass and apply an insecticide when needed.

The Brockmeiers have enjoyed success with a number of grasses including Fylking, a mixture of Delta, Newport, Park and common Kentucky blue and a mixture of creeping red and chewing fescue.

"Over the years, we've removed our sod from a newly-seeded field after 18 to 24 months of growth. This way, we don't have to reseed often. We take it about ¾ of an inch below the soil surface, leaving a portion of the root system. Within three weeks, the grass is beginning to grow back in again. By cutting the sod where we do, the exposed roots aid the sod in taking root in its new environment. After the first cutting, we can figure on a crop of sod approximately every 12 months," Brockmeier says.

In some fields, they alternate turf with soybeans or wheat. In other areas, they double crop beans and wheat. "We try hard to make the best use of each particular plot of land. Some of the ground is best suited for use as top soil and fill dirt so we are in that business too," he reports.

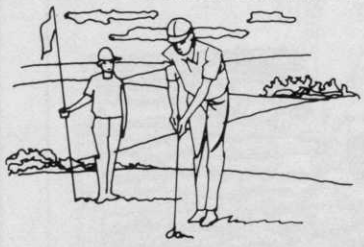
The Brockmeiers' sod business doesn't stop with the growing of good turf. When the sod is ready, it is cut into neat, unbroken rolls 18 inches wide and 6 feet long (1 square yard) for delivery or pickup. Examples of their sod can be seen throughout the Edwardsville area, including many lawns in the nearby, elite Glenwood Estates.

Good cultural practices have always been vital to the Brockmeier operation. Now the family is parlaying these qualities with a solid fungicide program for even better sod. □

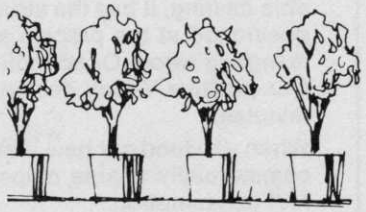
Horticultural Perlite...

The multi-purpose soil conditioner for turf, containers and propagation.

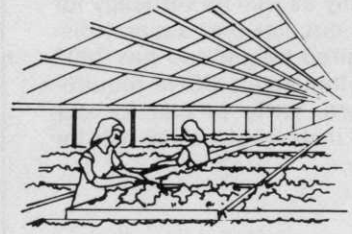
Professional landscapers and grounds maintenance men have long made Horticultural Perlite one of their main 'tricks of the trade'. It's an ideal soil conditioner that helps promote "a sea of green velvet". You see, by preventing compaction, it keeps the soil loose enabling more oxygen to reach and help nourish the root system. And because Horticultural Perlite also retains three to four times its weight in moisture, it keeps the root network moist long after watering. The result is a beautiful blanket of green growing on a thick healthy, robust root-system that not only keeps grass beautiful, but prevents **golf courses, institutional and campus lawns and residential lawns** from getting soggy, mushy or soft underfoot.



Nurserymen find Horticultural Perlite practically indispensible for **container grown plants and shrubs** because of its ability to retain moisture, and to keep the mixture around the root environment loose. It is also a great "starting mixture" for transplanted stock as it helps reduce the incidences of transplant shock. And because Horticultural Perlite is sterile and non-toxic, it won't rot, decompose, disintegrate or break down. Nor will it help promote insect life. Being light in weight, Horticultural Perlite makes container moving light work and shipping costs a lighter expense. It's not only ideal for your plants — Horticultural Perlite is ideal for your business.



For **plant propagation**, Horticultural Perlite soil mix is almost as important as sunlight. Because of its water-retention characteristics, this mixture maintains an even distribution of moisture to stimulate fast root development in cuttings and to speed seed germination. Most important, by keeping the starting mixture loose, Horticultural Perlite permits a freer flow of oxygen to help nurture the new growth. This also makes transplanting easy; without root damage; and without undo shock. Horticultural Perlite is inert matter that can last indefinitely in your seed beds. It is sterile, odor-free and can't promote insects or bugs. It is a great asset for the new beginnings of plant life.



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Circle 105 on free information card

MOWER *(from page 12)*

maintenance. This information is invaluable for determining the proper type of unit to use in a given area, the most economical brand of equipment, the good as well as the undesirable equipment operators, and methods for improving maintenance practices. Also, records are almost a necessity as a basis for projecting the life expectancy of a unit and for determining the most economical time to trade in old equipment.

A good rule of thumb for deciding that the time has come to replace equipment is when the total costs of repairs (parts and labor) have reached approximately 50 percent of the original purchase price. Manufacturers have worked up an expected average lifetime for each piece of equipment they produce, but it must be remembered that this information can only serve as a guide. Engineering is only one determining factor. Other important considerations are the type of quality of the turf to be cut and the conditions under which the machine is operated. Sandy conditions, thin or dusty turf, nearness to the seashore, a good or bad operator, quality of maintenance, storage, all have an effect; and Zoysia grass, for example, will dull equipment more quickly than bentgrass or Kentucky bluegrass.

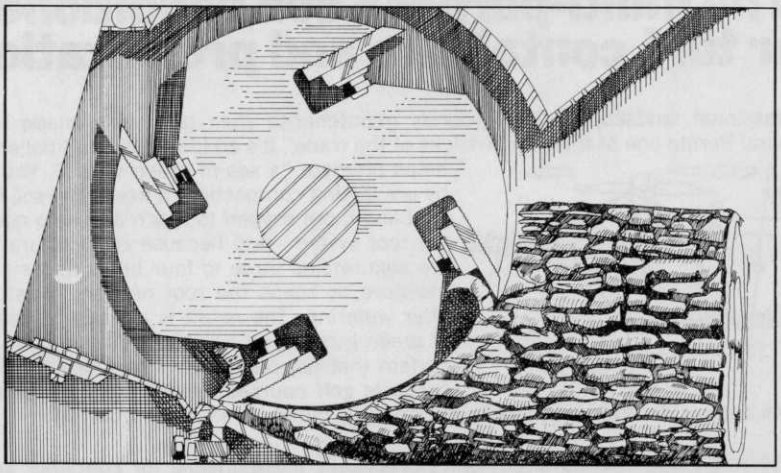
A common reason for shortened life span and high maintenance costs is the use of a machine for the wrong job. When choosing equipment:

1. Consider the terrain to be cut. Is it wooded, rough cutting, hilly or more formal? Decide if a reel or rotary type machine is to be purchased, based on course conditions.
2. Consider the size of the area and buy the largest machine that is practical. If the machine is to be used for trimming purposes and demands on the mower are not too heavy, a small, lightduty machine can be used, but higher maintenance costs on this type of equipment are inevitable.
3. Look for simplicity of design. A complicated machine has many moving parts and may have a high maintenance cost. Also, it may be difficult to adjust and a trained expert may have to be used for repair.
4. Check for construction and durability. The machine should be substantially built, well-braced, with good bearings. The sideframes, handles or drawbars should be heavy enough to do the job. The bed bars, reels, blades should be rigidly constructed.

Other considerations when selecting new equipment to improve efficiency would include (1) consultation with the manufacturer or his representative regarding the type of equipment needed. Information on new equipment and improved features, as well as the suitability of their equipment for the job

(continued)

There's a neat angle to our chipper story.



The secret's in the rotor. Being a steel forging, rather than a vulnerable casting, it has the structural strength to permit the blades to be positioned at the precise angle for slicing. No more chopping and mangling wood. Or spending an hour or two adjusting rotor blades. Our positive V-lock design reduces adjustment time to a matter of minutes.

When you feed our new Wayne brush chipper, you get neat, uniform, commercially usable chips. Without excess vibration, friction and fuel consumption.

And, there are other advantages. Such as a disposable six-sided bed knife that lasts 50% longer than conventional flat four-edged knives, yet can be replaced for less than the cost of sharpening others. A bed plate that adjusts horizontally as well as vertically for perfect results with hard or soft wood. A circular (not square) discharge chute that telescopes to any desired height and has 360° discharge controls. And a low noise level that meets OSHA requirements under normal operating conditions. Write or call for our chipper brochure. And, if you want proof instead of words, ask for a quiet demonstration.

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It proved to maintain a rich dark green color over a long growing season. Showed good rhizome and tiller development. Low growth with excellent density. Best of all, good resistance to leaf spot, stripe smut, rust and snow mold.

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*Bonnieblue, Majestic, Sydsport and Birka Kentucky Bluegrasses and Koket Chewings Fescue.

at hand, is readily available from the reliable manufacturer. (2) The availability of parts and service facilities. This is of prime importance when selecting equipment. If repair parts are not available when needed and a machine is inoperable for extended periods, it is of questionable value and certainly will contribute little to efficient operation. (3) Develop or estimate a reasonable or probable life and, based on current replacement costs, allow for the proper amount of depreciation per year. Then, request or provide a yearly sinking fund for the orderly replacement of the equipment when it becomes economically feasible or when a superior piece of equipment comes on the market.

To keep machinery operating costs at their lowest and to derive the full potential of the equipment's projected life span;

. . . buy quality equipment from a reputable manufacturer.

. . . buy the right machine for the right job.

. . . operate it properly, and start by reading the owner's manual.

. . . maintain it properly, by establishing a daily routine maintenance schedule supplemented by a periodic review with the factory service representative. Where such training is available, send your people to the manufacturer's service training school.

. . . and keep proper records.

The results will be increased efficiency and important savings. □

Circle 129 on free information card

FIRESTONE *(from page 26)*

Obviously, tractors that we are talking about are the turf type tractors with what they call an LCG (low center of gravity construction) with wider than normal tires. In fact, the tires on our present tractors were developed by the Firestone Tire & Rubber Co. in conjunction with research at the Firestone Country Club.

We have switched to diesel in the last couple of years because of economy of operation, and also because according to our maintenance records, we are incurring considerably less in maintenance costs.

When machines are used as many hours as ours, we find that down-time is an important consideration. Speaking of down-time, the tractor has proved again to be one of the most dependable machines that we have in our maintenance operation.

We have very few hours of down-time on our tractors in a golfing season. The problems that we might have with them are very minor, nothing that we cannot repair in a relatively short time. It has been a long time since we have had to send a tractor in for major repairs during the summer.

Of course, a part of this is, I am sure, a continuing maintenance program, and the fact that every winter we do go through the tractors thoroughly to prepare them for long summer use.

We try as best we can to change the oil and filters regularly, and grease them regularly, but other than that, they need little maintenance through the summer months.

For you Southern readers, the summer months for us would be May 1 to October 1, which is essentially our golf season.

One tractor that I have failed to mention is the tractor-loader-backhoe. This machine, although expensive, has proved to be one of the more valuable pieces of equipment we have. It has probably paid for itself over and over again, as we do a very large amount of work on construction projects.

All I have to do is look out the window now to see that within the last few days, we have helped a contractor put in two 1,000-gallon gasoline tanks. I realize how valuable and how convenient it is to own a tractor-loader-backhoe. Without this, it would be costing the company a considerable amount of money, both for rental and for lost convenience on our part.

We also have topsoil storage facilities, and buy our topsoil from a local contractor. The loader is used to load this topsoil into our dump truck. When you consider that we use 500 tons of this material a year, it becomes very evident how valuable the loader is.

We have one tractor with lug type tires on it and a dirt blade on the front. We call this our blade tractor. It is one we use for rough grading, roto-tilling, back blading, and it is a larger h.p. tractor than the others. The remaining six tractors are the turf tractor type. As you can see, we have a fairly large operation, and a considerable amount of outlying area.

We would like to believe, too, that we have a well set up maintenance operation, with enough equipment to do the job that we are called on to do.

Hosting the number of tournaments we do within a season, and keeping up with maintenance on two golf courses, which are kept in championship condition throughout the season, and are used by our 800 family members and many company-sponsored guests, our equipment inventory is reasonably large.

Our philosophy here is to get on the golf course, get the job done, and get off as soon as possible with a minimum amount of golfer interference. The golfer does not appreciate us around, and whenever the golfer is around, our efficiency drops considerably.

Really, what we are talking about is efficiency. Efficiency is money. This goes right back to the opening comment in the article that a tractor is probably the most im-

portant piece of equipment on the golf course. Maybe the term important could have been changed to efficient. In either case, Firestone Country Club simply could not operate without tractors. □

List of Tractor Attachments Used at Firestone CC

Quantity	
2	Rotary Mowers
2	Flail Mowers
2	Leaf Sweepers
3	Trailers (2- and 4-wheel)
5	Aerifiers (3 types)
2	Slicers
2	Back Blades
1	Front Blade
2	Earth Excavators
1	Front End Loader
1	Backhoe
1	Roto-tiller
1	Plow
1	Turf Quaker
1	Seeder
2	Verti Cutters
1	York Rake
1	Sickle Bar
3	Blowers
1	Auger
1	Gin Pole
4	Mowers

Soil Warming Technique Uses Heat from Power Plant

Waste heat from electrical power generating plants may someday be used to increase vegetative production by warming the soil. This idea is being explored by scientists at The Pennsylvania State University who report that such a system could increase production by 30 to 40 percent.

As conceived at Penn State, soil warming is achieved by circulating hot water through a buried pipe network located in soil irrigated with treated municipal wastewater. The circulating hot water is cooled and returned to the power plant for reuse.

Involved in the study are Dr. David R. DeWalle, associate professor of forest hydrology, Dr. Daniel D. Fritton, assistant professor of soil physics, and Dr. Louis T. Kardos, professor of soil physics — all with Penn State's College of Agriculture. The study was funded through the Institute for Research on Land and Water Resources at Penn State with a grant from the National Science Foundation.

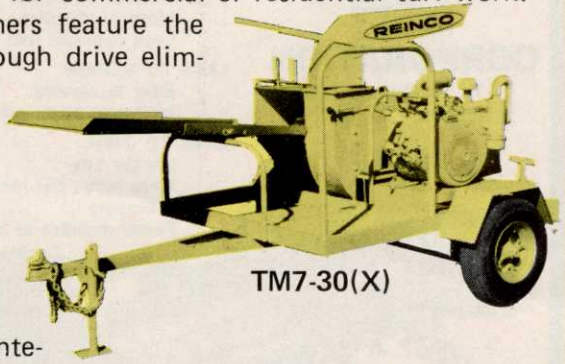
For each unit of electrical energy generated, two units of waste heat are driven off and wasted, the Penn State scientists said. Estimates are that by 1980 a volume of condenser cooling water equal to about one-fifth of the annual water runoff in the U.S. will be needed to remove this waste heat from steam electric power plants.

The Penn State study shows that soil warming competes with heat dissipation methods currently used, such as wet and dry cooling towers operated by power plants. When the soil warming system becomes reality, increased crop production could become a by-product of waste heat disposal.

Such a soil warming system is economically feasible, the scientists said. The electrical power needs of a city of one million people could supply waste heat for some 4,500 acres of land. The cost would add 2.6 percent to the consumer electric bill compared with ocean cooling and 0.9 percent when compared with the popular wet-cooling towers.

How much mulch could a Reinco mulcher mulch if a Reinco mulcher mulched mulch all day? 480,000 lbs.

Sounds incredible doesn't it? But the Reinco Power Mulcher M60-F6 can spread 10 tons of hay in just one hour.* It's a heavy-duty performer that spreads hay evenly and accurately up to a distance of 85 feet in any direction. And, if you have a smaller job in mind, Reinco's TM7-30 and TM7-30(X) are both ideally suited for commercial or residential turf work. All Reinco's mulchers feature the unique straight-through drive eliminating power-robbing belts, chains, and gears. Labor expenses can be cut as much as 5000% over hand shaking. Check out the other advantages like low maintenance and trailer-mounted construction for added mobility and versatility. *Write for further information to:*



TM7-30(X)

*24 hours — 480,000 lbs.

Reinco

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SKID STEER *(from page 17)*

ability while increasing stability. Generally, the range of bucket sizes complements machine horsepower and rated capacity.

Even though skid steer loaders can turn in their own length, differences in overall machine length affect the amount of space required for maneuvering. Factors to compare when evaluating maneuverability include, turning radius over bucket, width without bucket installed, and the overall length with bucket lowered. If you plan to use a loader inside buildings, overall height is important when operating through doorways or under limited overhead clearance.

Turning radius over bucket means, simply, the radius of the circle scribed by the outermost corner of the bucket when turning to the left or right.

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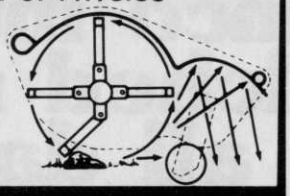

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Fewer mowers to buy

MODEL 88—88"
SUPER HEAVY DUTY
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Other models from 24" to 19 ft. gangs.

FLAIL MOWERS

Circle 103 on free information card

Width without bucket installed is the width of the basic machine. The wider the machine, the more room required for maneuvering. On some loaders, the smallest bucket may be narrower than the overall machine width. Yet in many cases it might be desirable to have the bucket or blade the same as the overall width of the machine, especially for clean-up work along sidewalls or barriers.

Some skid steer loaders have a narrow-aisle capability. By reversing and interchanging wheels, overall width can be minimized for tight squeezes. Alternate wheel setting provides maximum width along with increased stability.

Overall length with the bucket lowered is also a good measure for comparing machine size, and it will vary depending on the type of bucket installed on the machine.

Consider Height And Reach

Extreme bucket lift height may not be critical for certain applications. However, once a skid steer loader is put to work, its operator discovers a wide range of applications for the machine, some of which may be affected by the lift height.

To avoid problems, the maximum height of bucket lift should be considered before selecting a loader. Lift heights vary directly with loader size, ranging from 7 ft. to over 10 ft. In some applications, especially when loading materials into dump trucks, loader reach at the maximum dump height can be an important value.

Loader engine power ranges from 13 to 82 hp with most units in the 25 to 35 hp class. Most machines come equipped with a four-cylinder, air-cooled engine.

At present, there are no industry standards for the arrangement of controls for speed and direction or the loader lift and bucket dumping functions. Some machines have two levers that are moved or twisted, one with each hand, to control the various functions. Other loaders have a combination of foot pedals and levers to control operations.

Because skid steer loaders are especially designed for compactness, accessibility of components for servicing or repair can pose a problem. Therefore, it's a good idea to check that the engine and hydraulic system components requiring periodic service are readily accessible.

It's also advisable to have a skid steer loader with oscillating axles if you want to realize the maximum advantages of four wheel drive. This type of axle enables each wheel to maintain ground contact and maximum stability when the loader is traversing rough terrain or climbing obstacles.

The hydraulic system on the skid steer loaders is another key point to consider. It's critical that hydraulic fluid temperatures remain within the normal level range. If fluid temperature climbs too high, the system performance can suffer and permanent damage to hydraulics may result.

To ensure proper cooling, some loaders come equipped with a heat exchanger resembling an auto radiator. This type of exchanger is extremely vulnerable to clogging of air passages and mechanical damage.

Some manufacturers avoid the problems by utilizing the loader frame itself as the reservoir for hydraulic fluid. The frame of a skid steer loader not only affords

adequate protection against damage and contamination, but provides maximum surface for heat dissipation.

Operator Protection Systems

Since OSHA and other safety regulations have arrived, operator protection receives a lot of attention in basic machinery design. ROPS (Roll Over Protective Structure) structures and seat belts are now available on most units.

Additionally, cabs are designed to protect operator from objects or materials that could fall while being lifted. Some manufacturers even offer weather protection cabs on machines used outdoors.

In all cases, however, protective superstructures increase overall height of loaders and must be considered for use where overhead clearance is restricted.

One further point concerning safety protection is evident when a skid steer needs servicing or repair, and it's necessary to raise the loader arms. To ensure safety, the arms should be mechanically propped so they aren't dependent on hydraulic pressure to keep them stable.

Certain skid steer loaders have a mechanical locking device built into a machine's basic design. While on others, safety stop mechanisms are offered as accessory equipment.

Attachments For Many Applications

The different attachments are what make skid steer loaders so versatile. Accessory attachments for industrial applications include, forklifts, crane booms, dozer blades and grapple hooks for holding bulky material such as fencing, wire spools and 55 gal. drums.

Power-driven attachments are also available including rotary brooms, snow-blowers and post-hole diggers. These rotary powered attachments are usually driven by hydraulic motor and, some manufacturers offer backhoes that attach to the rear or front of the loaders.

If you plan to add accessory pieces later, be sure to check availability for your particular machine before buying. Most skid steer loader attachments are designed for easy installation and removal, and are not standardized among different manufacturers. □

WEEDS TREES & TURF

EQUIPMENT RALLY

JULY
AUGUST
SEPTEMBER

Three months of heavy emphasis on equipment in the green industry. The July, August and September issues of WEEDS TREES and TURF will carry more features, more data, more photographs on equipment than ever before. Rolling stock, engines, tree care and sod equipment, golf cars and course maintenance equipment, tractors, trucks and hand tools. Watch for the biggest green industry equipment rally ever held.

Guest Editorial

"There Ain't No Free Lunch"

By JOHN KINKEAD
National Mower Company

What this country needs is a common sense approach toward attainable goals.

For instance, it does us little good to obtain a perfectly safe and pollution free environment, and then find everybody starving to death because the country is bankrupt.

On the face it may seem to be a perfectly absurd statement, yet some of the government action lately is anything but a common sense approach; in fact, some decisions are decidedly myopic.

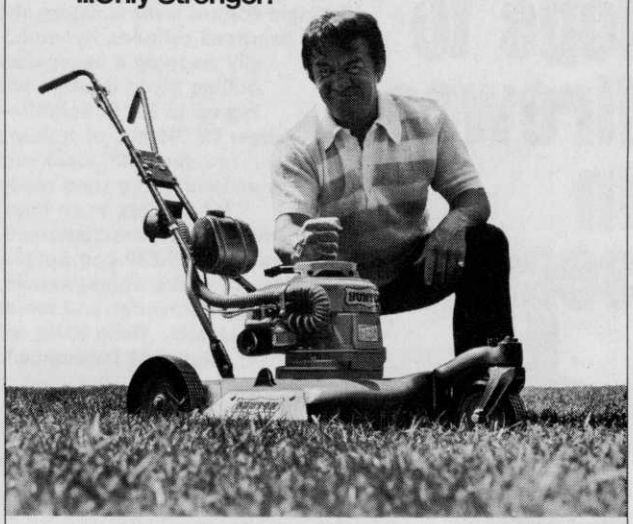
Nobody wants pollution and everybody wants to be safe. And we all know we need to improve. But the time has come to ask; "At what price perfection?" It may sound rather stark and distasteful, but in today's world of inflation we had better check our priorities and find what is attainable.

The Lawn Mower Industry is facing some pretty stiff newly proposed regulations. They are being drawn by

(continued)

BUILT LIKE A ROCK

...Only Stronger!



"Bunton lawn-turf equipment is built to take a beatin'... it's tough! Like this edger! Edger guards of heavy gauge steel, interchangeable and replaceable, prevent blade from marking or chipping and direct grass away from what it is edging." So listen to Rocky Graziano...send for more information today...with Bunton, you can't lose! Available from 8-inch to 52-inch cut.

BUNTON

BUNTON CO. 4303 Poplar Level Road, Louisville, Kentucky 40213, U.S.A.
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good people with good intentions, but when they finish a lot of people won't be able to afford a power mower. It is estimated that push mowers will jump in price as much as 74 percent and riding mowers as much as 30 percent.

Anything that moves poses a certain inherent risk. The operator has to exhibit some responsibility when using the machine. And to make it 100 percent safe or "idiot proof" that unit will be unaffordable.

Mower accident statistics show that about 85 percent of the accidents are a result of carelessness. This doesn't mean that the manufacturer has no responsibility to build as safe a machine as possible. He does build a safe machine and for many reasons. Let's concentrate on the selfish motives. If a product is unsafe or inferior to those units manufactured by the competition, then a NO SALE is rung up and that manufacturer is out of business. That's what a free choice society is all about.

There is, however, a joint responsibility between users and builders. Make them safe, use them safe. Outdoor Power Equipment Institute (OPEI), our industry association, has asked the government to let the industry write standards for power mowers. The government decided to use outside sources. The result is a very expensive set of standards. For instance, the cap on a fuel tank cannot be removed until the engine and exhaust temperature is below 250 degrees. Great idea, but how do you design it and at what cost? Everybody reading this article should read the proposed standards. They are expensive and inflationary. The dreamers and thinkers in government have decided that they are engineers. With the example of the auto industry, we can see clearly how reality is taking a back seat to wishful thinking. It is as if a non-dentist wrote the guide to dentistry and set up penalties for the dentist to insure that no one ever experiences pain.

I remember speaking with a veteran insurance man about OSHA, and he summed it up this way — 85 percent of the companies do their best to provide safe work places, 15 percent of the companies are in an inherently dangerous occupation and require special rules, and 5 percent of the companies are just plain "S.O.B.'s", who could not care less. In order to get at the five percent, we are raising the cost to everybody.

The Lawn Mower Industry should have a set of standards. But one that is attainable so that people can still afford to buy. We are living in an inflationary time, but the government is causing a lot of it with the bureaucratic regulations. For example:

ITEM: OSHA raised construction costs about 10 percent with no preceptible savings.

ITEM: OSHA estimated operational cost in 1973 was $3 billion, this is almost all inflationary or non-productive.

ITEM: OSHA gives more citations for electrical violations than anything else, yet electrical accidents rate on the bottom of the list.

ITEM: EPA wants the permissable decibel count

(continued on page 40)

split logs to firewood in seconds

Faster, easier and more economically than ever before, Vermeer's LS-200 Log Splitter takes the work out of making firewood. A single control lever activates the powerful overhead cylinder, hydraulically wedging a heavy-duty cutting blade through any log up to 30" in height — under 22,000 lbs. of splitting force. You can split, stack and have a truckload of firewood ready for delivery in an hour. Portable and self-contained, Vermeer's LS-200 Log Splitter is ideal for parks, campgrounds, tree farms, nurseries and rental operators. Write today for complete information.

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Toro® Groundsmaster 72® high-capacity trimming rotary mower.

Reason to buy #1

Only self-contained rotary with a 4-cylinder water cooled engine. Delivers extra power. Long life. Low maintenance. Quiet operation.

Federal Contract No. GS-00S-28263.
For further information write The Toro Company, Dept. WTT-85, 8111 Lyndale Ave. So., Bloomington, Minnesota 55420.

TORO®

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Installing underground utility lines and sprinkler systems can be a problem for grounds maintenance people, landscaping contractors, and golf course superintendents.

Ditch Witch would like to help.

At most sites, it's possible to make underground installations of telephone and electrical cable — even a complete sprinkler system *without* having to dig a foot of trench across your expensive turf. Ditch Witch vibratory plow equipment can do the job quickly and efficiently.

Of course, in some cases, due to the soil conditions and other factors, trenching is required.

The point is this: we've been in the service-line trencher business ever since we started it by introducing the first such equipment more than 20 years ago. Whatever your particular requirements, there's a Ditch Witch that's exactly suited to your needs.

Selling and maintaining Ditch Witch undergroud equipment is your Ditch Witch dealer's only business. He knows your area and its soil conditions, so he can help you determine the most practical and economical way to solve your problems. Let's get together!

Ditch Witch . . . equipment from 7 - to 195-HP.

CHARLES MACHINE WORKS, INC.
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Perry, Oklahoma 73077

DITCH WITCH ®

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USDA Issues New Publication For Moving Living Organisms

The U.S. Department of Agriculture (USDA) has issued a new publication that gives general information on the legal requirements for moving live pests, pathogens, and disease vectors of plants into and within the United States.

"This flyer is specifically intended for persons planning to move living plant-related organisms for scientific purposes," said James O. Lee, acting deputy administrator of USDA's Animal and Plant Health Inspection Service (APHIS).

"Federal regulations prohibit the importation and interstate transport of plant pests and pathogens unless permits are obtained in advance from APHIS. In each case, risks to U.S. plant life are carefully weighed against expected benefits. before decisions are made on issuing permits," he explained.

Lee explained further that many foreign pests, not harmful to plant life in their native country, can become very destructive in the United States where natural enemies to curb their populations may not occur.

"Although all of nature may be regarded as the scientist's laboratory," Lee continued, "some researchers unwittingly endanger the environment in the U.S. by introducing pests contrary to quarantine regulations."

The new USDA publication lists the types of organisms requiring permits and spells out the procedure for applying for a permit.

Free copies of the publication, How to Move Live Pests, Pathogens, and Disease Vectors of Plants (PA No. 1110), may be obtained from local APHIS-USDA offices or by writing to: APHIS Information Division, USDA, Room 1150, South Building, Washington, D.C. 20250.

Dow US General Counsel Testifies on Toxic Chemicals

J. H. Hanes, general counsel for Dow Chemical U.S.A., testified on July 10 in opposition to three proposed toxic substances bills, such bills purporting to extend Federal control to chemicals and dangerous substances.

In his testimony, Hanes pointed out that from both the public's and industry's standpoint such bills are not needed and should not be passed. His statement was presented before the Subcommittee on Consumer Protection and Finance of the Committee on Interstate and Foreign Commerce, U.S. House of Representatives, in Washington, D.C. Hanes listed four major reasons for his company's opposition to the legislation. They are:

1. There already are many laws giving the Federal Government adequate authority to control dangerous substances, and there exists viable legal means enabling injured parties to seek redress. Some 27 health and environmental laws are presently in effect. The new legislation will tend to give near dictatorial powers over the chemical industry to the administrator of the Environmental Protection Agency.

2. The inflationary impact of the proposed laws far outweighs the slight possibility of avoiding hazards to the public or to the environment.

3. Such legislation, if enacted, could stifle the discovery or production of chemical products which could solve major problems in health, food production, pollution control or other vital areas.

4. The proposed laws could result in the loss of many jobs due to the lessened ability of the U.S. chemical industry to compete in domestic and world markets. Further, the banning of products by EPA would be a further serious blow to an already depressed economy.

Hanes added that, while there were health and environmental problems in the past, the chemcial industry has outpaced municipalities and public utilities in investing capital to control water, air and solid waste emissions. Also, he said that the safety record of the chemical industry is twice as good as the record for all industry in the U.S.

The chemical industry, according to Hanes, shares public concern for the long term effect of its products. Millions of dollars are being spent to gather various data on a wide variety of products. Recently, 11 chemical companies formed the Chemical Industry Institute of Toxicology to further study commodity chemicals,the basic building blocks of the industry. The Institute, Hanes said, will also emphasize the development of new methods of safety evaluation and make these studies available to all.

Emphasizing the broad reach of existing regulations, Hanes concluded by pointing out the dangers of scare tactics being used by proponents of the legislation and he underscored the potential for near dictatorial powers within EPA. Such powers, he said, could stifle the industry, add fuel to inflation through unnecessary cost increases and add to the unemployment problems of the nation. As an example of such powers, Hanes told the committee that the definition of environment is so broad that killing harmful organism could be a basis for banning a product.

Bulletin Says Even Gypsy Has Many Natural Foes

The ecological life and times of a tough and unpopular immigrant has been published in the new U.S. Department of Agriculture Information Bulletin, "The Gypsy Moth and Its Natural Enemies."

Convinced that an ounce of knowledge may be worth more than a ton of impetuous attack, ento-

Circle 127 on free information card

mologists from the USDA's Forest Service Northeastern Forest Experiment Station have been studying the life cycle and habits of gypsy moths for almost a score of years. One result of the studies is now focused on using the gypsy moth's natural enemies to control it, instead of depending completely on pesticides.

Introduced into this country from Europe just over a century ago, the gypsy moth defoliated trees on over 750,000 acres last year in the northeastern states and has created serious damage to trees on the countryside in the Middle Atlantic section of the nation. Insatiable, prolific and — like its name — migratory, this insect pest has so far managed to defy all major attempts to suppress it.

Over the years, the gypsy moth has acquired a handful of natural predators, including birds, rodents and other insects. The bulletin itemizes these helpful predators and describes their method of attack. It is the hope of forest scientists that scientific encouragement of these natural enemies of the gypsy moth may help bring this defoliating pest down to tolerable levels.

"The Gypsy Moth and Its Natural Enemies" (Agriculture Information Bulletin No. 381) is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price is 60 Cents.

Inventory of Sod Growers New ASPA Market Survey

For the past several months, the American Sod Producers Association (A.S.P.A.) has been conducting an industry-wide "Inventory of Producers" in both the U.S. and Canada.

A spokesman for that organization said the industry totals will be used in a variety of ways to benefit both producers and buyers of sod. Factual information collected from the surveys can be used effectively in preventing legislation and administrative rulings having adverse effects on the operation and business management of the sod producers as an industry.

A.S.P.A. legal counsel, William Harding, Lincoln, Nebraska, hopes to formulate collected information into tools necessary to emphasize to the government the importance of the industry and why its voice should be heard. Harding said he plans to present the data to Congress and the ever-growing administrative bureaucracy who often make decisions directly effecting the industry without necessary knowledge of the industry itself.

The A.S.P.A. executive staff has been working for a number of months with land grant colleges, directors of agriculture and several other sources to implement a program in each state for verification of industry information. when completed, the inventory will be the most complete and accurate source of information on the sod industry. It can then be used to answer questions regarding the size of the industry and other total market information.

A new staff of officers is now controlling the direction of A.S.P.A. as a result of an election at the July 16-18 meeting in Kansas City.

Norman LeGrande, Hendricks Sodding and Landscaping in Lincoln, Nebraska, is the new president. LeGrande previously served as a member of the Board of Trustees and was the board Liaison Director for the 1975 convention. Vice-president for the upcoming year is Charles Lain of Pine Island Turf Nursery, Inc., Sussex, New Jersey. Glenn Rehbein, Circle Pines, Minnesota, will serve as secretary. And Tom Thornton, Thornton's Turf Nursery, Elgin, Illinois, is the newly elected treasurer.

New members of the Board of Trustees include; Glenn Rehbein; John Hope, Manderly Turf Farms, Ltd., North Gower, Ontario, Canada; and Charles Davis, Wharton Turf Farms, Wharton, Texas. Davis is the retiring president of A.S.P.A.

Plans were also announced at the meeting to hold their annual mid-winter conference on the gulf side of Florida, February 5-6, 1976. The Sheraton Sand Key Hotel in Clearwater will serve as the meeting headquarters.

1975 Design Awards Progran At Texas Landscape Meeting

A highlight of the Texas Society of Landscaping Architects Annual Meeting to be held September 19-20, 1975 at College Station, Texas will be its Design Awards Program according to Robert W. Caldwell, president.

Any landscape architect registered in the state of Texas is eligible to enter any of his landscape projects which have been completed within the past ten years. Participants are offered three categories in which to compete: residential, public, and commercial. Entries are to include a scaled plan or working drawing of the development, supplemented by sketches or photographs of the finished design, and a concise statement of objectives, problems encountered and restrictions. Three winners in each category will be presented handsome engraved wall plaques and the respective homeowner or business owner will receive certificates.

The Design Awards Program which was so successfully initiated in 1974 is under the direction of Dr. William C. Welch of Texas A&M University, College Station, and H. Durward Thompson of Texas A&I University, Kingsville.

All entries and fees ($10 for TSLA members and $15 for non-members per single entry) should be sent to John Teas, Secretary-Treasurer, 4400 Bellaire Blvd., Bellaire, Texas 77401, no later than August 15.

Lakeshore bags it!

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The concentrated organic that takes up less storage space. Pathogen-free and odorless, too.

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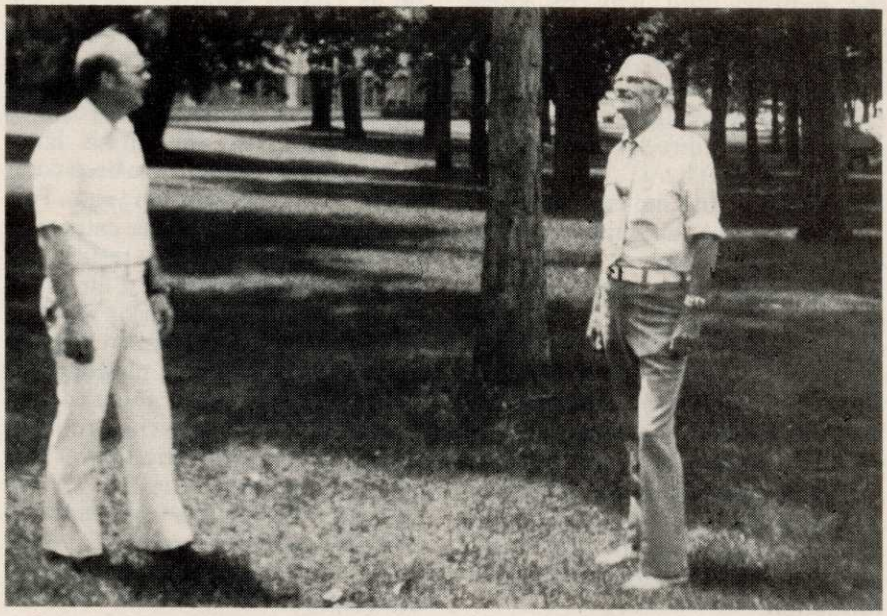

John Brugeman (left) and Fred Gleason, maintenance supervisors at Ford Motor Co., Dearborn, Michigan, look over implant demonstration site in preparation for the 1975 International Shade Tree Conference Convention, August 10-14, in Detroit. Visitors will have an opportunity to examine actual comparisons of treated and untreated trees at the I.S.T.C. field demonstrations on the 14th.

EUROPEANS *(from page 14)*

render conventional applications of iron chelates virtually ineffective.

The increasing grower cost of chelates has made conventional applications very expensive, particularly at high rates and repeat sprays as required to correct the "lime — induced chlorosis". In 1975 Creative Sales, Inc. (basic manufacturer and owner of the MEDICAP® patent) and MONTESHELL (Milan, Italy) have teamed up to introduce MEDICAP FE to the Italian fruit grower on a commercial basis. According to Peter G. Hirst, Manager of Third Party Products for MONTESHELL, more than 7500 peach and pear trees and grape vines will be injected this year using MEDICAP FE. Hirst claims their 1975 test market has been received with very high interest. Growers are attracted by the adaptability of implants for "spot — treatment" of problem trees or vines in their groves. They soon learn that this new product is initially more effective, but as well more economical than chelate sprays, since control lasts more than one season using the capsules.

An expanded program has now been implemented to test the implants on fruit trees in Spain, Portugal, Netherlands, Belgium, Switzerland, West Germany, France, South Africa, Israel, Greece, Syria, Turkey and Lebanon.

Early tests in southern California have also resulted in some rather remarkable comparisons when Avocado trees were injected with Iron MEDICAPS.Again, further testing is underway to determine the commercial interest from fruit growers in the arid alkaline soil zones of the southwestern United States. □

EDITORIAL *(from page 36)*

lowered from OSHA's 90 to 85; estimated cost $31.6 billion.

ITEM: It costs $4 billion a year to support federal regulation agencies.

ITEM: An engine plant in Wisconsin was forced by the government to stop using coal. They now use 1 million gallons of oil every 26 days.

ITEM: Auto Industry forced to use Catalytic Mufflers. Now even the government wonders if it was right; yet General Motors spent over $100 million developing it.

ITEM: Western paper plant forced from coal to oil, then back to coal. Transition ran into millions of dollars.

ITEM: Ford Motor Co., president, Iacocca, predicts 1978 auto standards will cost consumers $9 billion a year.

Unfortunately this list goes on and on. And the consumer, you and I had better realize that all these costs are passed on to us — "There ain't no free lunch" the saying goes.

It sounds like a cliche, but have you written your Congressman lately? If you don't squawk, we all may wake up to absurd cost-increasing standards.

Corenco bags it!

NITROFORM*
organic nitrogen

HERCULES INCORPORATED

The organic nitrogen that saves you labor, equipment use, and time . . . because it's so long-lasting. Try it.

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Northern California Fertilizer bags it!

NITROFORM*
organic nitrogen

The turf nitrogen for nursery stock, too.
Gives the same steady sustained growth.

STH74-17 BR

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Meeting Dates

Canadian Parks and Recreation Association, annual conference, Quebec City, Aug. 10-14.

International Shade Tree Conference, 51st annual meeting, Heritage Hotel, Detroit, Mich., Aug. 10-14.

Rhode Island Golf Course Superintendents, annual turfgrass field day, University of Rhode Island, Kingston, R.I., Aug. 20.

Illinois Turfgrass Foundation, Golf Day, Indian Lakes Country Club, Bloomingdale, Ill., Aug. 25.

Irrigation Seminar, sponsored by the Northern California Turfgrass Council, Asilomar Conference Grounds, Pacific Grove, Calif., Sept. 5-7.

Turf and Landscape Day, Ohio Agricultural Research and Development Center, Wooster, Ohio, Sept. 9.

Pacific Horticultural Trade Show, San Diego Convention Center, San Diego, Calif., Sept. 13-15.

Illinois Turfgrass Foundation, Inc., 1975 Field Day and Open House, University of Illinois, Urbana, Ill., Sept. 16.

California Association of Nurserymen, annual convention, Town and Country Hotel, San Diego, Calif., Sept. 16-18.

Transworld Home Horticulture Exhibit, International Amphitheatre, Chicago, Ill., Sept. 21-24.

Outdoor Pest Services Clinic, sponsored by the National Pest Control Association, Inc., Kansas City, Kan., Sept. 26-27.

National Agricultural Chemicals Association, 42nd annual meeting, Greenbrier, White Sulpher Springs, West Virginia, Sept. 28-Oct. 1.

Rocky Mountain Turfgrass Equipment and Products Show, Adams County Regional Park, Oct. 2.

Hort-I-Scope, International Short Course, Curtis Hixon Hall, Tampa, Fla., Oct. 2-4.

National Bark Producers Assoc.,Inc., Key Biccayne Hotel, Key Biscayne, Fla., Oct. 2-5.

Florida Nursery and Allied Trades Show, Curtis Hixon Hall, Tampa, Fla., Oct. 3-5.

Florida Turfgrass Conference and Show, Sheraton Towers, Orlando, Fla., Oct. 12-16.

Kentucky Turfgrass Council Conference and Field Day, Barren River State Resort Park, Lucas, Ky., Oct. 14-15.

Southern California Turfgrass Council, 15th annual turfgrass equipment and materials exposition, Orange County Fairgrounds, Costa Mesa, Calif., Oct. 22-23.

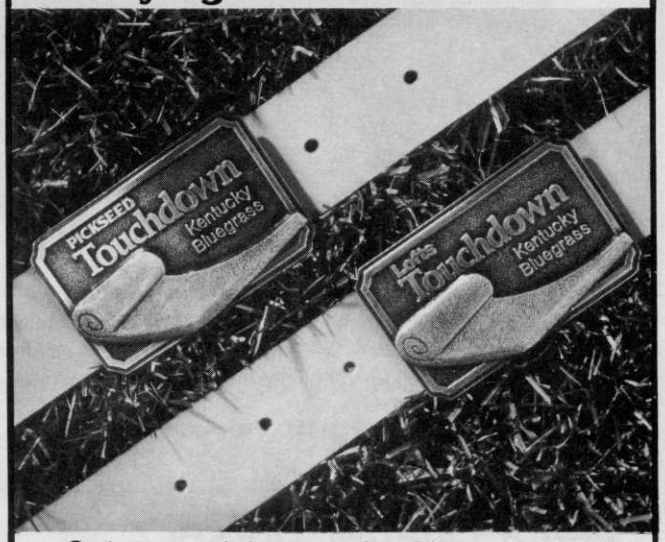
26th Central Plains Turfgrass Conference, Manhattan, Kan., Oct. 22-24.

National Insititute on Park and Grounds Maintenance, 5th annual educational conference, Chase Park Plaza Hotel, St. Louis, Mo., Nov. 3-6.

Better Trees for Metropolitan Landscape, U.S. National Arboretum, Washington, D.C., Nov. 4-6

GET A BELT FROM YOUR BLUEGRASS

Touchdown Kentucky Bluegrass will give you outstanding Bluegrass performance and... Pickseed and Lofts will give you an original brass buckled belt for trying Touchdown.



Order a minimum of 100 pounds of Touchdown Kentucky Bluegrass for 1975 delivery and seeding and you'll receive FREE, this original brass buckled, leather belt, custom designed for Pickseed and Lofts.

Then hitch up your pants with pride at the performance of Touchdown.

- Disease resistance — Leaf spot, Leaf rust, Stripe smut
- Fast turf development
- Bright green color and early spring green up
- Thrives under conditions of low mowing and "lower than Merion" nitrogen rates
- Excellent, professional quality seed

To get your Touchdown and your belt, contact:

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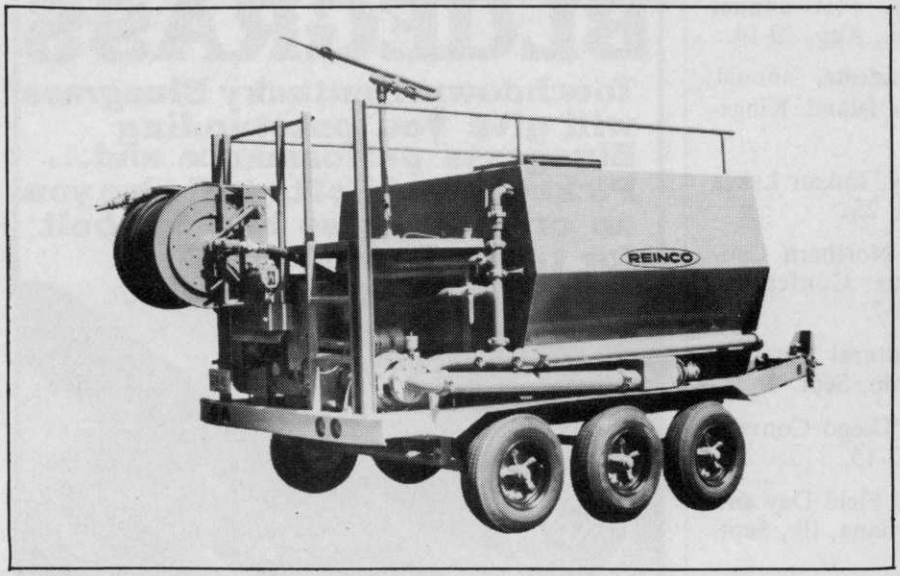
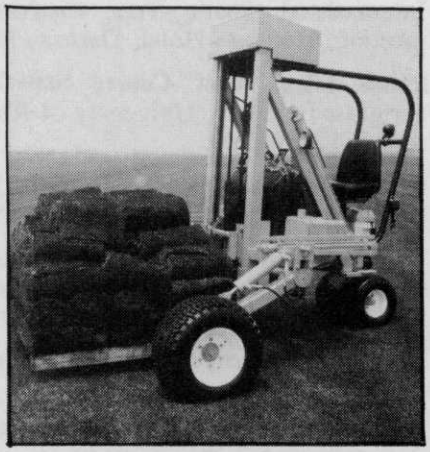
New Products



BIGGER HYDROGRASSER: This is the new 1,000-gallon hydrograsser from Reinco, called the HG-10-A. It is mounted on its own trailer and carries the fully charged load of 2,500 pounds of granular solids anywhere. Any truck size can be used to pull the unit.

Circle 701 on free information card.



LOAD HANDLER: It's a new unit for handling sod from Foxcroft Development . . . a unit which cna handle sod and then be attached to a truck or trailer bed for transportation. The unit is powered by a 25-HP Onan, has a 3,000-lb. carrying capacity, turning radius of 69 inches and maximum pallet width of 56 inches.

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Get a Quarter Horse! T.M.

the utility vehicle that ends costly breakdowns and high repair bills

QUARTER HORSE

PULLS, HAULS, CARRIES . . .

UP HILLS...OVER ROUGH TERRAIN

- ☐ steady, proven Tecumseh engine with standard parts available locally from over 10,000 dealers
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Write now for brochure, prices and name of nearest dealer

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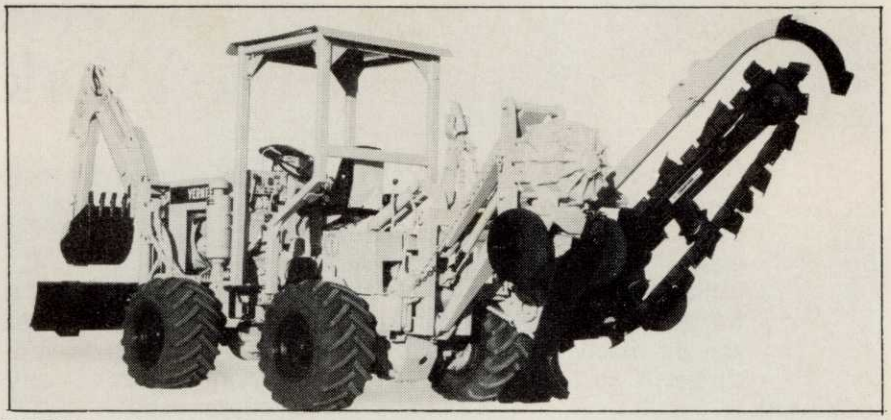
ELECTRIC: Hesston has an electrically driven, hopper-type portable spreader available as an optional attachment on its Front Runner FMT. It's called the SP-300 and can handle variable spreading widths up to 50 feet.

Circle 703 on free information card.

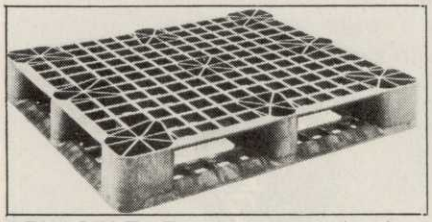
SERT-A-DUMP: This truck-body unit from Pac-Craft Products has a 5,000-lb. capacity and can mount on a ¾ or 1-ton truck body. It operates from a truck or car 12V battery and has a hydraulic pump system.

Circle 708 on free information card.



COMBO: It's a combination unit from Vermeer that now handles several functions without additional attachments . . . it's a trencher, plow, backhoe, backfill blade and boring tool. It is made possible by addition of a combination trencher-vibratory plow attachment on the Vermeer M-470 tractor.

Circle 704 on free information card.



REUSABLE: This is a reusable plastic pallet from Phoenix Plastics which the manufacturer says has a life expectancy of 10 to 15 years. It can take a dynamic load of 2,200 pounds, the company says. The firm has announced that the pallets are now available for export to the United States from the Netherlands. Pallets are produced there by the injection molding process, with rounded corners on all sides.

Circle 709 on free information card.

LOW PROFILE: The new 46 IEMC hp International 2400B industrial tractor from International Harvester is for mowing, blade work, scarifying, loading and backhoe operations. It's available in regular and Lo-Boy.

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Regal Chemical bags it!

NITROFORM*
organic nitrogen

HERCULES INCORPORATED

The nitrogen that pampers delicate turf. Feeds slowly instead of causing surges of growth that can cause stress.

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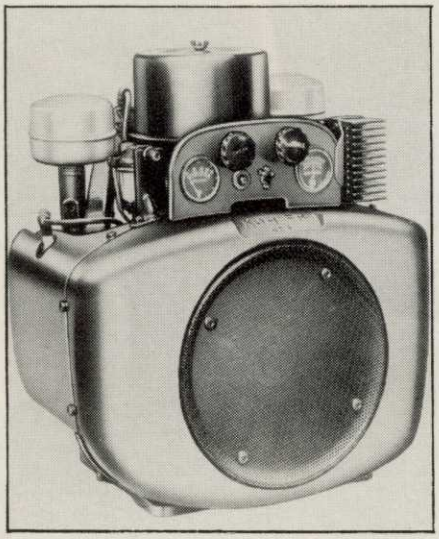

23-HP: Kohler has a new two-cylinder engine called Model K582S, rated 23-HP. The engine pictured is equipped with 12-volt automotive-type starter, 15-amp alternator, and a control panel for ignition switch, amperage and oil pressure gauges, and choke and throttle controls.

Circle 707 on free information card.

Lawn & Golf bags it!

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The easy-handling, slow-release nitrogen that gives uniform coverage in any type spreader.

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A burst of brilliance...
Fylking for the World's Fair!

Fylking Kentucky bluegrass is a superior, elite bluegrass that burst like a star on the scene in the sixties!

Since then Fylking has established records making it the perfect choice for the official grass at the environmental World's Fair, Expo '74.

Fylking has proven to have superior resistance to disease and drought; withstands traffic. Its thickly woven rhizome root system develops dense sod so quickly Fylking can be lifted in 90 days. Fylking can be mowed at 3/4 inch (even 1/2 inch) and thrive. It absorbs carbon dioxide pollutants, gives off oxygen, cools air by releasing water vapor.

A superior mixer, Fylking greens up earlier in spring, stays greener in summer heat, remains green longer into fall.

Choose Fylking and your customers are getting a grass good enough for a World's Fair!

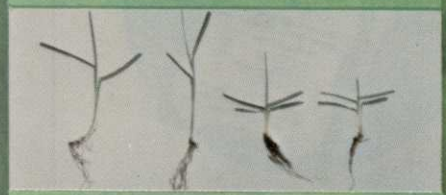
0217 BRAND®

FYLKING KENTUCKY BLUEGRASS

U. S. Plant Patent 2887

Another fine product of Jacklin Seed Company

Fylking's rhizome root system develops so thickly, under ideal conditions sod can be lifted in 90 DAYS.



Low growth, short leaf sheaths and abundant tillering of Fylking (right) compared with another elite bluegrass plant.

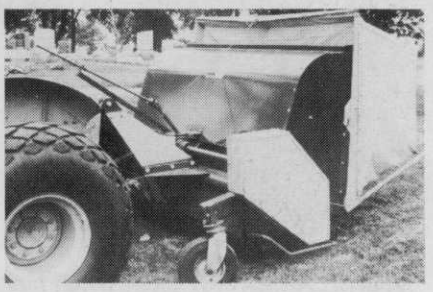
Cross section displays thick, luxuriant turf, fine leaf texture and brilliant green color of Fylking.

A MILLION: Simplicity has a "special edition" lawn and garden tractor, the 5010 LTD to commemorate building of its one millionth product unit. Each model is personalized for its owner.

Circle 718 on free information card.

THREE WHEELERS: Hesston has the new Front Runner Three Wheeler, available in either a 16 hp or a 19.8 hp model. It has a heavy-duty automotive gear box with rack and pinion steering. Front-wheel hydrostatic drive and high-flotation turf tires are meant to give stability and traction. The manufacturer says one lever controls instant forward/reverse and infinitely variable speeds from 0 to 11 mph in either direction with no gears to shift.

Circle 717 on free information card.

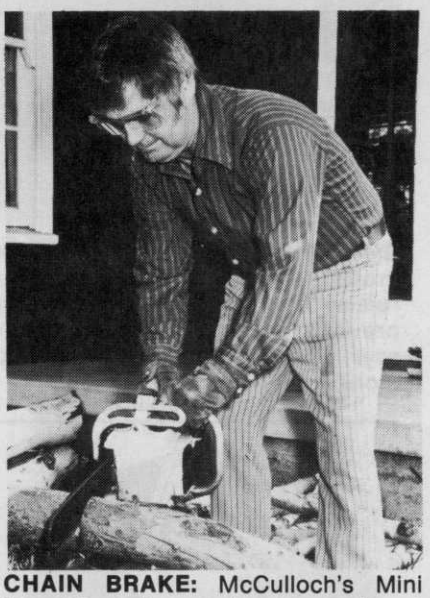


GENIE: Mathews Company has introduced the Lawn Genie, a unit to clean turf, mow grass, sweep lawns, produce mulch and vacuum shrubbery. It is available in 36", 60" and 72" cutting widths. The manufacturer says the unit's vacuum action will sweep small braches and twigs, even cans, into the hopper. When the hopper is full, the self-cleaning hopper will release the material itself.

Circle 714 on free information card.

JIFFY DUMPER: This unit, from B.R.O.T. Incorporated, has a self-contained hydraulic lift and fits pickups, fleetside or stepside (Ford, Chevy, Dodge, International). It is called the Jiffy Dumper, able to dump up to 3,000 lbs.

Circle 710 on free information card.



CHAIN BRAKE: McCulloch's Mini Mac 25 chain saw is now equipped with a chain brake to help reduce the hazard from "kickback".

Circle 715 on free information card.

AQUATIC WEED CONTROL

Sea-Ranch

WEED PROBLEMS IN YOUR LAKE OR POND?

Often referred to as the ecology fish, the White Amur has proven to be the most economical way to control under-water weeds, grasses, moss and algae. The AMUR eats only vegetation, does not eat other fish, does not reproduce in your pond and will give control for 10 years or more. The AMUR has been used very successfully in private lakes, golf course ponds, and industrial waters. Fish should be stocked only in confined waters.

For Further Information: Write Sea-Ranch Inc.
Rt. 2, Box 604, Sheridan, Ark. 72150 or call, 501-942-2515

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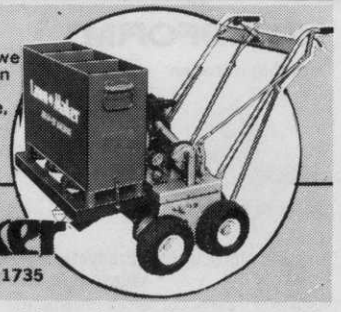
THIS POWER MACHINE AERATES AND PRECISION-DISPENSES THREE TURF MATERIALS SIMULTANEOUSLY.

seed, fertilizer, controls, etc.

If you service lawns, or plan to, we have a complete "automated lawn service" management, training and marketing program available, free with your LAWN MAKER combine. This machine is also excellent for Greens.



Lawn Maker
57 Verdi St., Farmingdale, N.Y. 11735

Circle 153 on free information card

MODULARMATIC: Ditch Witch has a new model (the R100) of Modularmatic underground equipment. This concept, the manufacturer explains, permits one basic vehicle to perform varied underground jobs simply by switching interchangeable modules. The R100 may be equipped with three digging boom lengths of 4, 6 or 8 feet.
Circle 711 on free information card.

GRASSHOPPER: This Grasshopper model, Moridge Manufacturing, retains operator-comfort features of previous models, the manufacturer says, while controls have been made more responsive.
Circle 712 on free information card.

Hill bags it!

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organic nitrogen

The slow-release nitrogen that helps turf keep its good looks without repeated fertilizing. Use it to save labor.

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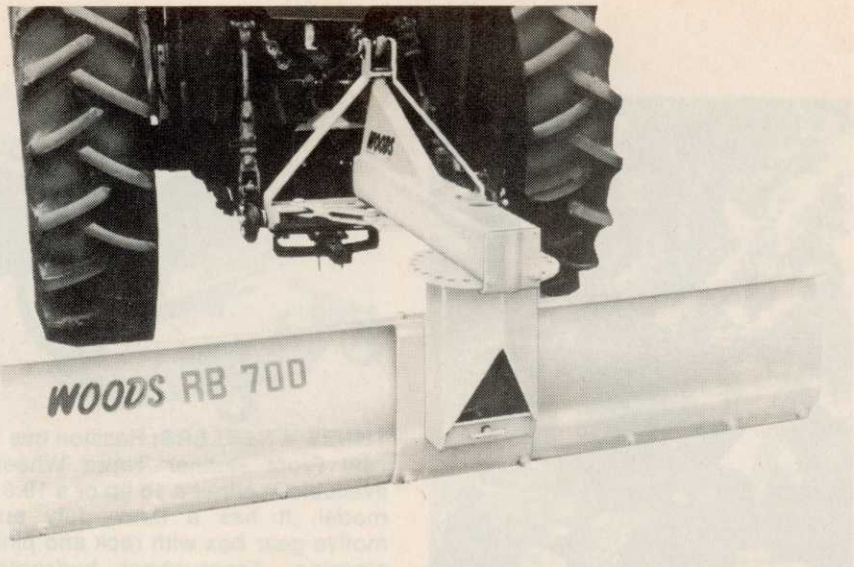

REAR BLADE: The WOODS Division of Hesston has announced a medium-duty Rear Blade for scraping and ditching, in 6, 7 or 8-foot widths, for tractors up to 60 HP.
Circle 705 on free information card.

POWER ROTARY: This power rotary spreader, the PT-10 being marketed by ProTurf Division of O. M. Scott & Sons, was designed to be used on the tailgate of a utility vehicle such as a Cushman Truckster or Toro Workmaster. It's powered by an electric motor on a 12-volt battery, has 2,800 cu. in. hopper capacity and a 1,400 cu. in. hopper extension. The PT-10 mounts on class "O" three-point hitches and most drawbar attachments, according to the manufacturer.
Circle 713 on free information card.

WEIGHS A TON: Hyland Manufacturing has a new heavy-duty utility trailer with a 10,000 lb. carrying capacity. It is equipped with a standard ball-hitch for use behind any pick-up or heavy car. It weighs about a ton, is constructed of 3/16" diamond plate steel, is equipped with dual rear loading ramps and comes in 10-18' standard production lengths. The 72"-wide body is mounted on dual axles with 8.00 x 14.5, 12 ply tires. It can be ordered with either Surge or electric brakes. Hyland is known for fifth-wheel commercial cargo vans and truck bodies in dry or refrigerated models. The firm customizes to specification on all units.
Circle 716 on free information card.

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People on the Move

H. J. (Jack) Boatwright, Jr., now manages the Industrial Chemicals marketing group of U.S. Borax. In related changes, **Roger Hinchman,** formerly general sales manager, was promoted to assistant to the executive vice president—marketing. In the Industrial Chemicals Marketing group, **Ben M. Allen,** was named manager—marketing operations and **Warren G. Coray,** was promoted to sales manager. In the plant foods Marketing Group, **J. R. (Jim Turner,** was promoted to sales manager.

* * *

E. S. (Duke) Newton appointed to the post of director of turf irrigation sales for the Irrigation Group of the Toro Co. Toro also announced the election of **Donald R. Brattain** to the post of vice president—human resources.

* * *

Kohler Co. has reassigned three men to their home office. The men and their assignments are: **Robert A. Leffel,** manager—national Accounts; **Timothy L. Neugent,** account executive; and **Alan J. Wilson,** account executive.

* * *

Tom Rutherford has been named area manager—commercial developments for the Velsicol Chemical Co. In his new position, Rutherford will be responsible for development of turfgrass and pest control products.

* * *

Gerald R. Nitz has been to an agricultural chemical district sales manager for the Elanco Products Co. **David K. Putnam** was named market development advisor in the worldwide agricultural marketing planning division.

* * *

Prof. Carl F. Gortzig has been appointed chairman of the Department of Floriculture and Ornamental Horticulture at the N.Y. State College of Agriculture and Life Sciences, Cornell University, for a five-year term, effective July 1.

* * *

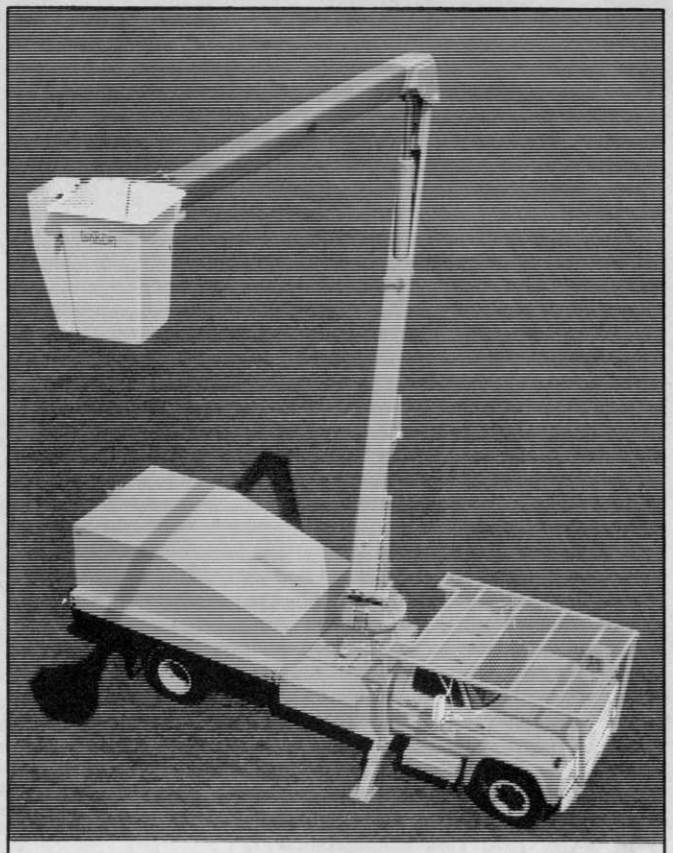
R. F. Mitchell, Jr., was recently accepted to the board of directors of Lawn and Garden Supply Co., Tucson, Ariz.

* * *

D. George Harris has been elected to the newly created position of president and chief operating officer of Rhodia, Inc. In other company moves, **Michel Paul Lavalleye** appointed director, product development of all products developed and marketed by the Agricultural Division of Rhodia. **Denise Wright** promoted to the Division's advertising assistant.

* * *

Melnor Industries named **Seymour H. Graye** to senior vice president. **Eugene C. Okin** was promoted to group vice president—marketing. And **Michael C. Raphael** was assigned new products manager.



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Check the many features of Baker's all new B-Series Aerials. Available in 50 and 65 foot heights, totally new design cuts out chains, cables, scissors. Simplicity of action with only one cylinder and three hinge points at elbow, platform and mounting.

No complicated machinery buried inside boom—nothing to dismantle for maintenance. Just regular lubrication of outside fittings will keep B-Towers going year after year.

The result—lowest total cost for any tower you can buy today. Low maintenance and less downtime make B-Series Aerials the best money savers in the business.

Baker has several of these B-Series units in their rental fleet for your short term needs or can arrange lease plans to fit your particular situation. Give us a call today (804) 358-0481 and ask for a B-Series demonstration.

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Classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

Rates: All classifications 50¢ per word. Box number, $1. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment.

FOR SALE

ARPS stump cutter teeth, top quality and best price in U.S.A., D. J. Andrews, Inc., 17 Silver St., Rochester, New York 14611. Call 716 235-1230.

WHOLESALE SOD business, Florida location, before depreciation proft $75,000 on 1974 sales of $385,000. Priced to sell. Box 134, Weeds Trees & Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

OVER 800 TAXUS SHRUBS for sale. 24" to 4' high. May leave at present location one year. $5,000.00. Sycamore Tree Service, Sycamore, Ohio 44882. Phone 419 927-9752.

USED EQUIPMENT

FOR SALE 1974 Toro Groundsmaster 72 mower, 300 plus hours, excellent, $4000.00. 1974 Excel Hustler mower, 150 hours, excellent $4200.00. 1974 Rogers Aero-Seeder, seeded less than 20 acres, new blades, perfect, $1650.00. T. Nelson, Beecher, Illinois 60401. Phone 312 946-2133; 312 798-7072.

FOR SALE: Used Ryan 18" auto-cutoff sod cutter with sulky. May be seen at Oak Harbor, Ohio. Phone 419 893-2311 or 308 697-4686.

FOR SALE: 2 used aerial baskets — 50 ft. working height, 2 Asplundh brush chippers. Bean sprayer, 35 G.P.M. Vermeer stump cutter 1560. Parkway Tree Service, Milwaukee, Wisconsin. Phone 414 257-1555.

HYDROSEEDER, Hydroturf 600 gallon, one year old, excellent condition. Cost new $4000, sacrifice at $3000. Lawn Medic, 212 Cobblestone, East Peoria, Ill. 61611. Phone 309 699-0780.

VERMEER TS-30A tree spade, Bowie Victor 500 hydro-mulcher. Phone 817 469-8943.

SEEDS

SOD QUALITY Seeds Merion, Fylking, Delta, Park, Newport, Nugget, Adelphi, Cheri, Glade and Baron bluegrasses also fine fescues. Manhattan rye grass. Custom mixing available. Michigan State Seed Co., Grand Ledge, Michigan 48837. Phone 517 627-2164.

LAWN SEEDS Wholesale. Full line of quality grasses. Fescuse, Ryegrasses and Bluegrass varieties including Fylking, Nugget and Glade. Write today or call collect for price quotations. (216) 753-2259. Oliger Seed Company, 2705 Wingate, Akron, Ohio 44314.

HELP WANTED

DISTRIBUTORS for D. J. Andrews, Inc. stump cutter teeth, pockets and bolts. Best wholesale and retail price in U.S.A. Add to this exclusive area, local advertising at our expense, etc., and you have our story. D. J. Andrews, Inc., 17 Silver St., Rochester, N.Y. 14611. Call 716 235-1230, or 716 436-1515.

WANTED MANUFACTURERS' REPRESENTATIVE Long established manufacturer of quality irrigation controls desires representation in Southern California area, including Arizona and Clark County, Nevada. Sales thru established distributors and O.E.M. accounts. Warehouse desirable to handle Consigned Stock. Write Mike Bizzoco, Tork Time Controls, 1 Grove St., Mt. Vernon, New York 10550.

MARKETING REPRESENTATIVE Landscape Maintenance Industry — Excellent opportunity for ambitious man or woman with leading company in Dallas-Ft. Worth Metroplex. Applicant must have knowledge of all aspects of Professional landscape maintenance. Prefer 3 years sales experi-ence. Earnings unlimited. Send complete resume to: Loyd Smith, Maintain, Inc., 2549 Southwell, Dallas, Texas 75229.

MISCELLANEOUS

EQUIPMENT SERVICE AND PARTS — New England and New York State. Authorized servicing of aerial lifts and chippers by factory trained personnel. Specializing in Asplundh and Skyworker. Two convenient locations plus complete road service. Service contracts available. Call C.U.E.S., Inc., 603 889-4071 or 203 634-3146.

Sloane Ends 2-Year Strike Votes Out Rubber Union

R & G Sloane Manufacturing Company, Inc., a wholly-owned subsidiary of The Susquehanna Corporation, reported the termination of a tweny-seven month strike by the United Rubber, Cork, Linoleum and Plastic Workers of America, AFL-CIO at the Sun Valley, California plant. On June 19, 1975, the National Labor Relations Board certified an election, held at the Sun Valley plant during the previous month, in which Sloane's employees voted 164 to 11 to decertify the United Rubber Workers Union as authorized bargaining agent, thus ending what is believed to have been one of the longest strikes in Southern California history.

Sloane's management expressed satisfaction with the vote of confidence by its employees. The nationwide boycotting of its products, which had taken place intermittently during the strike, is now at an end.

EDITORIAL *(from page 6)*

businessman who is in the business can bypass the benefits by remaining a non-member.

Like most groups with which we have worked, the ASPA has its strong member leaders. They were directly responsible for the early growth. Also, at this point, we have to mention the strong leadership of Dr. Henry Indyk of Rutgers University who for several years served as the executive secretary along with his university position. He put together a number of strong educational programs and several successful field day extravaganzas.

Association membership costs time and money. But it is usually the best expenditure of funds in terms of gainful management tips which you can make.

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Safety Test & Equipment Co. 6
Solo Motors.....24
The Toro Company 36
Tuco Div., Upjohn Co. ...18, 50
Vermeer Mfg. Co. 36

Trimmings

The Finite Element Method, a computer-fed image flashed on a screen, allows engineers to visualize weaknesses in a design. For example, a light pen which the engineer touches to any sub-component of the structure can be computer programmed to exert a given force to that area. The cubes actually deform before his eyes if the design is faulty. Using this visual examination, researcher and development engineers can resolve many problems before the first prototype is made.

Biological control methods are here to stay. According to a report in a recent issue of GRIT Magazine, a few researchers are planning for the day when herds of Southeast Asian water buffalo will roam the banks of rivers and lakes in Florida chomping away on water bonnets, hyacinths and other weeds. Hugh L. Popenoe, director of the tropical agricultural center of the Institute of Food and Agricultural Sciences at the University of Florida at Gainesville, readily admits that water buffalo may be a very economical way of controlling aquatic weeds. The water buffalo is the latest in a long line of attempts to control water weeds clogging inland waterways in Florida. The white amur, an Asian weed-eating fish, was given an audition about three years ago. But Florida officials, according to the article, fear the giant fish, which can reach 80 pounds, might upset the natural balance of the waterways. Sea cows, or giant manatees, were also tested, but these sluggish mammals got in the way of motorboats, and many were killed. Popenoe said that he has been trying for six years to import water buffalo, which can reach a weight of 2,000 and can eat up to 300 pounds of weeds daily.

When Stihl American decided to hold a Fight the Recession rally as part of their on-going campaign to boost confidence in the economy, it was only natural that a virtuoso wood-cutting demonstration be included in the day's program. Here Gordon Williams, chairman of Stihl, looks on while Janine Martella, Cliffside, N.J., tries the chair on for size.

Symposium Features Shade Tree Evaluation

The Ohio Agricultural Research and Development Center (OARDC) and Ohio Chapter, International Shade Tree Conference (ISTC) recently co-sponsored a Shade Tree Day at the Center's Wooster, Ohio facility.

The Shade Tree Symposium program and ISTC meeting were featured activities during the morning session. The one-day program was concluded by wagon tours to the Shade Tree Evaluation Plot in Secrest Aboretum.

L. C. Chadwick, professor emeritus Ohio State University (OSU) and OARDC, told the morning audience of nearly 200, that since the first planting in 1965, 140 different kinds of trees have been established in the evaluation plot. One of the methods used in selecting the desirability of the trees, Chadwick said, is to relocate and establish them in different areas throughout the state. "Our idea is to plant and observe the trees under different growing conditions than those conditions here at the aboretum," he said.

Frank S. Santamour, supervisory research geneticist, U. S. National Arboretum, Washington, D.C., presented his opinions on the new cultivars and weak points in the testing process. "The first thing to remember is that the new cultivars are not pure from top to bottom. A resistant root stock developed by selective breeding is grafted to a top section, Santamour said, and that doesn't necessarily assure a perfectly formed, disease-free specimen."

Other speakers discussed various municipalities and their street tree programs. Richard Boers, commissioner of forestry, Toledo, Ohio, described his program and some unique methods of recycling and distributing logs and wood chips.

Dutch Elm Disease (DED) and insect control research were updated by Charles L. Wilson, Agricultural Research Service USDA, Department of Plant Pathology, and David G. Nielsen, assistant professor of entomology, OARDC and OSU, respectively. Wilson discussed the extent to which DED has covered the country. "This disease is a lot smarter than we once thought it was, he said. It has spread from localized areas to most of the continental U.S." Control measures he is currently studying include applications of various forms of benomyl.

The Shade Tree Evaluation Project is being conducted in cooperation with various Ohio utility companies, Ohio Chapter, ISTC and the Ohio Nurseryman's Association. Each June and September, a committee representing all cooperating agencies evaluates the trees for their desirability as potential street and roadside trees.

The Shade Tree Evaluation Plot was featured in the afternoon portion of the meeting. Here people examine a few of the many varieties of new cultivars growing in the plots. Since the first planting in 1965, 140 different kinds of trees have been established in the plot. The area is "wide open" and resembles conditions found in most street tree and homeowner plantings.

Beautiful turf is no accident. Make it happen with Acti-dione® 4-season disease control

The old saying that beauty is more than skin-deep is nowhere more applicable than on a golf course. Beautiful turf will not retain its beauty unless it remains healthy. In addition to normal wear and tear from golf play and stress from variable weather conditions, fungi are an ever-present health threat to turf. There's little you can do about golf play and weather, but you can control fungal diseases. An effective, economical way to combat fungal growth all year long is to use Acti-dione® Thiram and Acti-dione TGF® in a four-season disease control program. With fungi out of the way, turf has a better chance to grow strong and healthy — to resist weed infestation, to bounce back from injury and to survive adverse weather conditions. See your TUCO distributor today for complete information and assistance in planning a four-season disease control program with Acti-dione turf fungicides.

Stop snow mold before it starts

Cold weather and snow cover before the ground is frozen make ideal conditions for development of snow molds. For winter disease control, apply Acti-dione Thiram in the late fall before the first snowfall and during periods of thaw.

Use Proxol* 80SP to help prevent insect damage

TUCO Division of The Upjohn Company, Kalamazoo, Michigan 49001

*Trademark

Remember the famous old Turf King?

Just like the rest of us Jacobsen Distributors, Al Van Pelt of the Boyd Martin Company in Salt Lake City, Utah has fond memories of the 76" and 84" Turf Kings.

They were workhorse mowers in the turf world. But now they've become a memory with the introduction of the new, improved 1974 models.

First off, they've been completely redesigned. Look at the sharp styling. It's your first hint of all new features that are aimed at making the old leaders the new leaders.

The variable speed drive has been replaced with a hydrostatic drive that's better. The transport speed has been increased to over 8 MPH.

The old handle bars are gone. You'll find a sleek new steering wheel instead because it makes turning easier and offers more control.

The rope starter has been replaced by recoil starting right from the driver's seat. Speaking of the driver's seat, you'll notice it's now high-backed for firmer support. And it's even more comfortable. The gas tank is bigger for fewer fuel stops.

There are some things that were too good to change, so we didn't.

The Turf Kings can still cut their way through 30 acres in a day. With beautiful results. The mowers are fully articulated to follow the dips and slopes of uneven ground.

And the constant speed reels put a consistently fine and smooth finish to any turf.

You'd better talk to your Jacobsen Distributor about these new three-reelers. A simple demonstration will make you forget all about any second best equipment.

Even our old Turf Kings.

Your Jacobsen Distributors.

Before we sell it, we buy it.

For the name of the distributor near you write: Jacobsen Turf Distributor Directory, 1721 Packard Avenue, Racine, Wisconsin 53403.

Circle 113 on free information card

"Since 1971, every pound of bluegrass mixture we use at Merion Golf Club contains 75% baron Kentucky Bluegrass."

U.S. Plant Patent #3186 Dwarf Variety

Richard Valentine, Golf Course Superintendent at Merion Golf Club has some interesting ideas about turf management. Here are some experiences he has shared with us.

"I don't believe in heavy feeding, and that seems to suit Baron just fine. I never use more than three pounds of nitrogen per 1000 square feet per annum. Baron doesn't seem to need those high nitrogen applications that some people are using on bluegrass. And, less fertilizer means less fungus and thatch. . .I like that."

"We have a tradition to uphold here at Merion and, by golly I'm going to make sure we use nothing but the best. Baron Kentucky Bluegrass belongs here at Merion."

"I used to have much more thatch before I started using Baron. And it comes up fast too. I cut-in Baron and it germinates in 10 days . . . one half the normal time." Rich discusses Baron's quick growth with Peter Loft and Andy Sweeney, local supplier.

"Merion has lots of hillsides and slopes . . . here's where Baron really stands out. We use a Jacobsen Seeder and cut seed into the soil. You have to plant grass seed . . . you can't just throw it on the ground. The only place I don't use Baron is on the tees and greens, which are bentgrass."

Richard Valentine, Golf Course Superintendent at Merion Golf Club, Ardmore, Pa. is the second superintendent in Merion's famous 79-year history, succeeding his father, Joseph, who held the position for 54 years.

"We cut our fairways to one inch all year long. During our regular Fall renovation program on approaches and drive areas, we use a mixture of five bluegrasses . . . 75% of that mixture has been Baron. We'll use the same mixture next Fall."

"I've used Baron for four years on all my fairways and up to this date I haven't had one case of helminthosporium. Baron stays greener during the cold months and brightens up fast in the Spring."

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